d) Means or Egress Analysis.

e) Fire Assembly Locator Sheet.

f) Exterior and Interior Accessibility Route.

g) Fire Stopping, Including Tested Design Number.

# PROJECT TEAM

UVU

**MECHANICAL:** 

Spencer Howell

Van Boerum & Frank

330 South 300 East

fax (801) 530-3150

phone (801) 530-3148

DFCM Mike Ambre Project Manager 4110 State Office Bldg. Salt Lake City, Utah 84114

phone (801) 209-9104

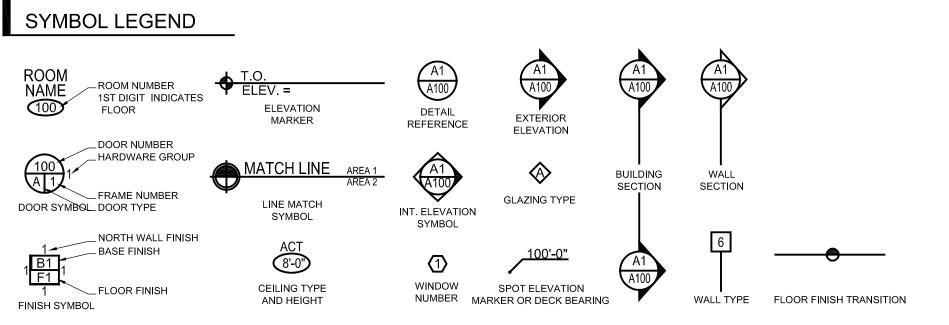
STRUCTURAL: Bsumek Mu Reinhardt Bsumek 345 South 400 East Salt Lake City, Utah 84111 phone (801)575-8223 fax (801)532-3778

James L. Michaelis Associate Vice President Facilities Planning 800 West University Parkway Orem, Utah 84058-5999 phone (801)863-8130

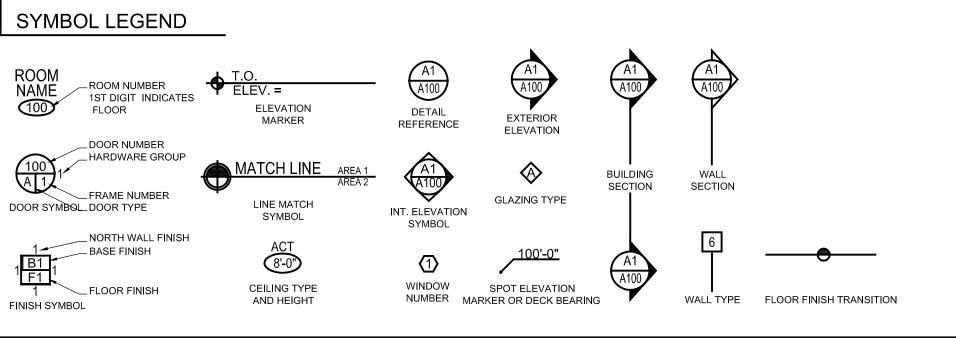
Salt Lake City, Utah 84111

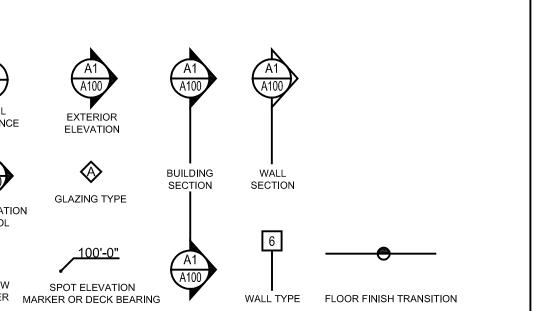
**ARCHITECT: AXIS ARCHITECTS** Pierre O. Langue AIA 352 S. Denver St. Salt Lake City, UT 84111 phone (801)355-3003 fax (801)355-0113

**ELECTRICAL: BNA Consulting** Elaine Fawson 635 S. State Street Salt Lake City, Utah 84111 phone (801) 532-2196 fax (801) 532-2305



**GRAPHIC SYMBOLS** 





CONCRETE

GI101 GENERAL INFORMATION
GI102 ACCESSIBILITY REQUIREMENTS <u>ARCHITECTURAL</u>

DRAWING INDEX

AE001 ARCHITECTURAL SITE PLAN AE101 PLANS AE201 BUILDING ELEVATIONS AE301 BUILDING SECTIONS AE601 DETAILS

**STRUCTURAL** 

AE602 DETAILS

SE001 GENERAL NOTES SE101 FOOTING, FOUNDATION AND ROOF FRAMING PLAN SE301 DETAILS **MECHANICAL** 

ME001 SYMBOLS AND ABBREVIATIONS ME101 PLAN AND SCHEDULES

PP101 PLANS AND DETAILS

**ELECTRICAL** 

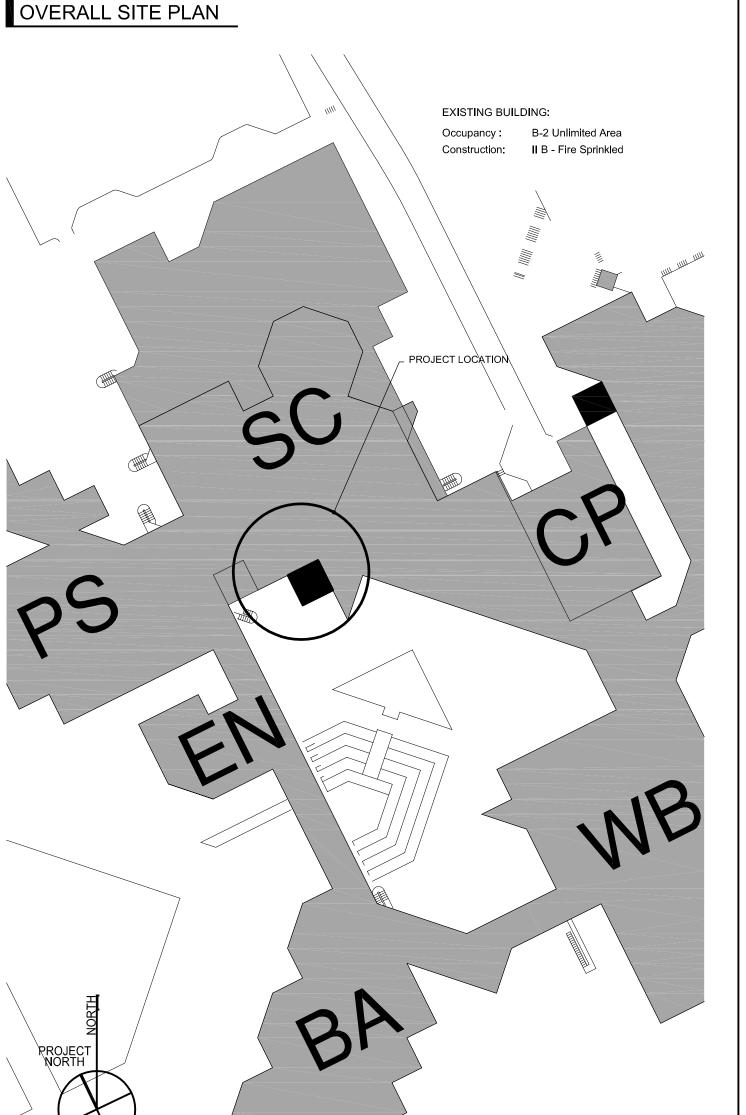
EG001 SYMBOLS, SCHEDULES, NOTES EL201 LIGHTING PLAN

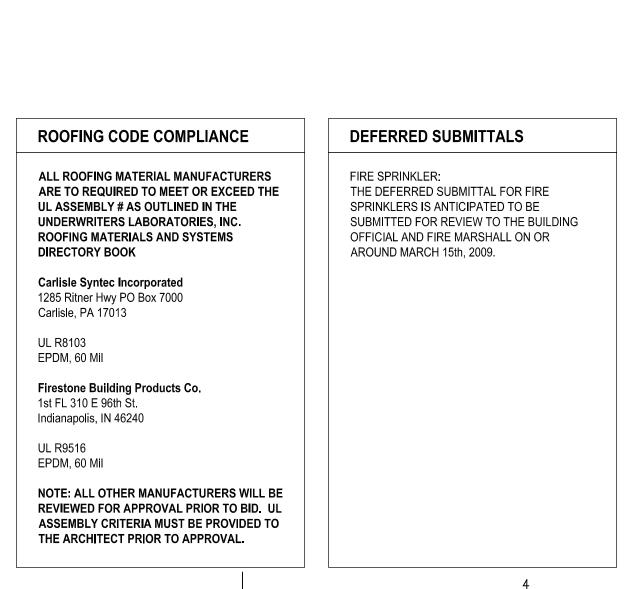
EP301 POWER PLAN EX401 DIAGRAMS

NOTE: THE SHEETS LISTED ABOVE REPRESENT A FULL SET OF CONSTRUCTION DOCUMENTS AND INCLUDE A DETAIL BOOK AND A PROJECT MANUAL AND SHALL NOT BE SEPARATED, ANY CONTRACTOR, SUBCONTRACTOR VENDOR OR ANY OTHER PERSON PARTICIPATING IN OR BIDDING ON THIS PROJECT SHALL BE RESPONSIBLE FOR REVIEWING ALL THE CONSTRUCTION DOCUMENTS INCLUDING BUT NOT LIMITED TO DRAWINGS, DETAILS, PROJECT MANUAL, SPECIFICATIONS AND ANY AND ALL

# UTAH VALLEY UNIVERSITY CREDIT UNION ADDITION Orem, Utah

DFCM PROJECT #08308790 CONSTRUCTION DOCUMENTS February 16th, 2009

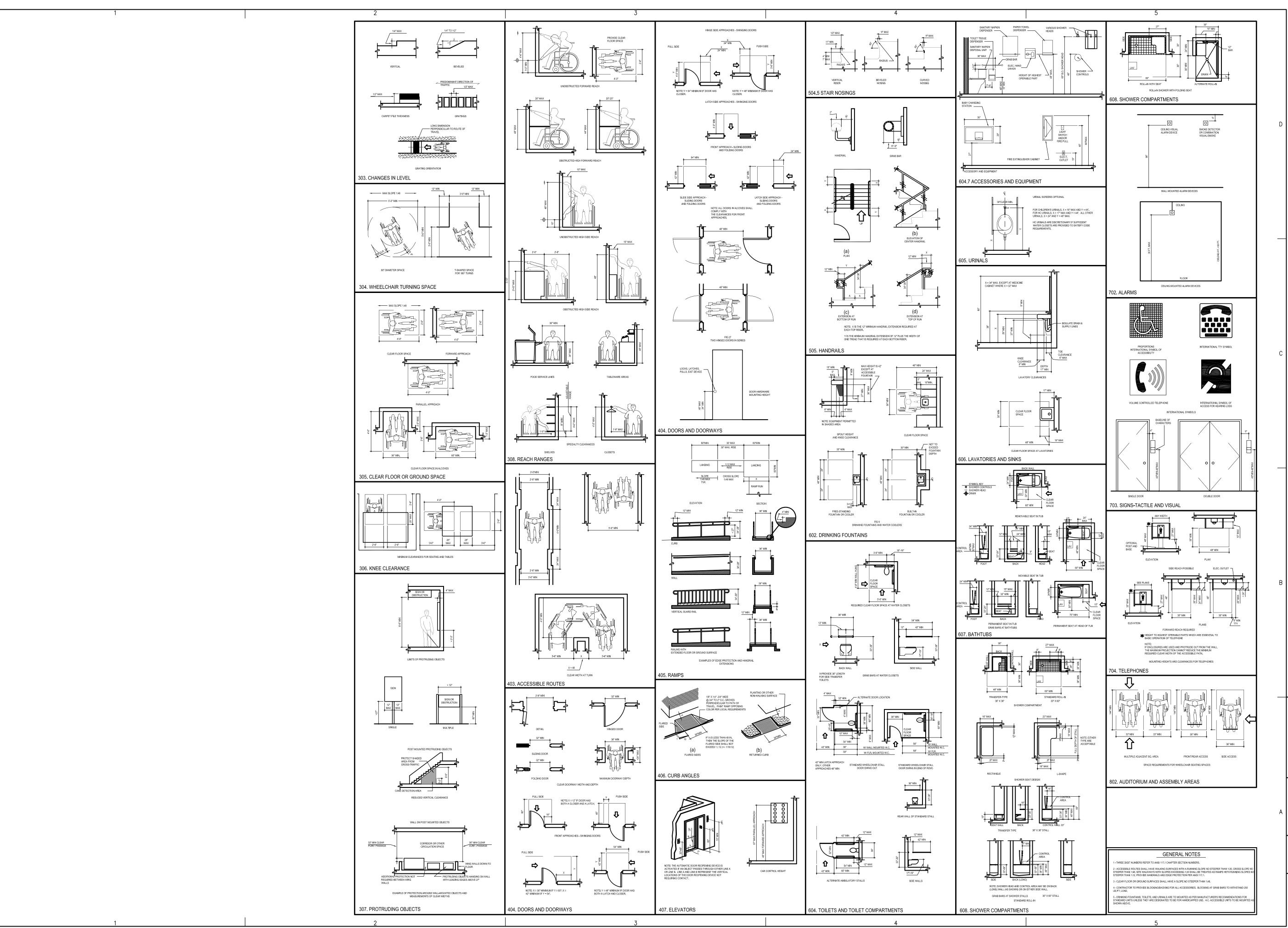




Axis Job# 08308790 02-16-2009 Checked

GENERAL INFORMATION

GI101



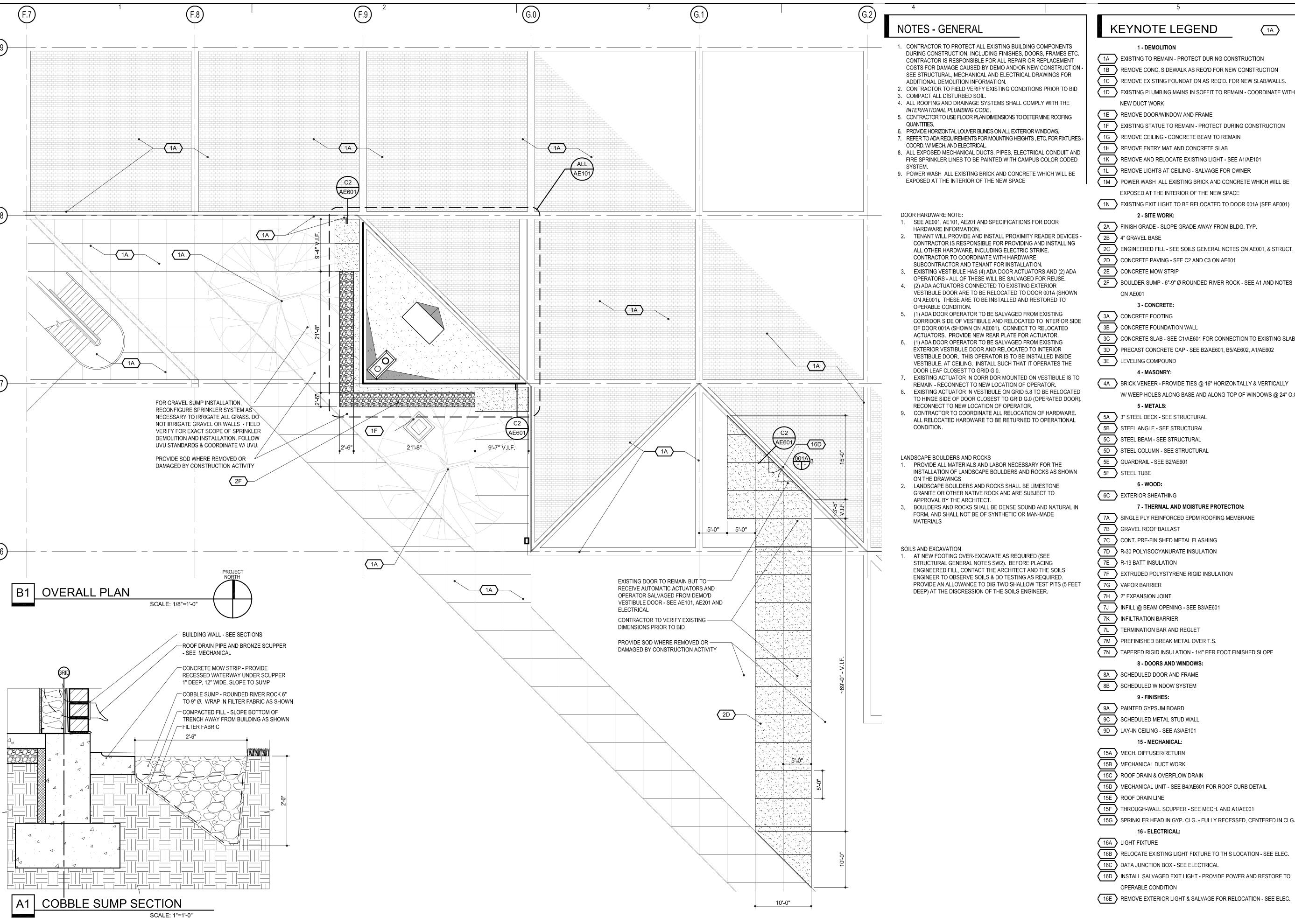
Utah Valley University Credit Union

Axis Job # 0819 Owner # 08308790
Date 02-16-2009
Drawn

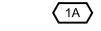
ACCESSIBILITY COMPLIANCE

Checked

GI102







1 - DEMOLITION ( 1A ) EXISTING TO REMAIN - PROTECT DURING CONSTRUCTION

1C REMOVE EXISTING FOUNDATION AS REQ'D. FOR NEW SLAB/WALLS.

( 1E ) REMOVE DOOR/WINDOW AND FRAME

( 1F ) EXISTING STATUE TO REMAIN - PROTECT DURING CONSTRUCTION

1G REMOVE CEILING - CONCRETE BEAM TO REMAIN

1H REMOVE ENTRY MAT AND CONCRETE SLAB

1K REMOVE AND RELOCATE EXISTING LIGHT - SEE A1/AE101

1L REMOVE LIGHTS AT CEILING - SALVAGE FOR OWNER ( 1M ) POWER WASH ALL EXISTING BRICK AND CONCRETE WHICH WILL BE

EXPOSED AT THE INTERIOR OF THE NEW SPACE

(1N) EXISTING EXIT LIGHT TO BE RELOCATED TO DOOR 001A (SEE AE001) 2 - SITE WORK:

( 2A ) FINISH GRADE - SLOPE GRADE AWAY FROM BLDG. TYP.

2C > ENGINEERED FILL - SEE SOILS GENERAL NOTES ON AE001, & STRUCT.

2D CONCRETE PAVING - SEE C2 AND C3 ON AE601

2E CONCRETE MOW STRIP

2F BOULDER SUMP - 6"-9" Ø ROUNDED RIVER ROCK - SEE A1 AND NOTES

3 - CONCRETE:

( 3C ) CONCRETE SLAB - SEE C1/AE601 FOR CONNECTION TO EXISTING SLAB

3D PRECAST CONCRETE CAP - SEE B2/AE601, B5/AE602, A1/AE602

4 - MASONRY:

( 4A ) BRICK VENEER - PROVIDE TIES @ 16" HORIZONTALLY & VERTICALLY

W/ WEEP HOLES ALONG BASE AND ALONG TOP OF WINDOWS @ 24" O.0

5D STEEL COLUMN - SEE STRUCTURAL

5E GUARDRAIL - SEE B2/AE601

( 6C ) EXTERIOR SHEATHING

7 - THERMAL AND MOISTURE PROTECTION:

7B GRAVEL ROOF BALLAST

( 7C ) CONT. PRE-FINISHED METAL FLASHING

7D R-30 POLYISOCYANURATE INSULATION

7F EXTRUDED POLYSTYRENE RIGID INSULATION

7J > INFILL @ BEAM OPENING - SEE B3/AE601

7K INFILTRATION BARRIER

7M PREFINISHED BREAK METAL OVER T.S.

7N > TAPERED RIGID INSULATION - 1/4" PER FOOT FINISHED SLOPE

8 - DOORS AND WINDOWS

8A SCHEDULED DOOR AND FRAME

(8B) SCHEDULED WINDOW SYSTEM 9 - FINISHES:

9A PAINTED GYPSUM BOARD

9D LAY-IN CEILING - SEE A3/AE101

15 - MECHANICAL:

15D MECHANICAL UNIT - SEE B4/AE601 FOR ROOF CURB DETAIL

15F THROUGH-WALL SCUPPER - SEE MECH. AND A1/AE001

15G SPRINKLER HEAD IN GYP. CLG. - FULLY RECESSED, CENTERED IN CLG.

16 - ELECTRICAL:

16B RELOCATE EXISTING LIGHT FIXTURE TO THIS LOCATION - SEE ELEC.

16C DATA JUNCTION BOX - SEE ELECTRICAL

( 16D ) INSTALL SALVAGED EXIT LIGHT - PROVIDE POWER AND RESTORE TO

( 16E ) REMOVE EXTERIOR LIGHT & SALVAGE FOR RELOCATION - SEE ELEC.

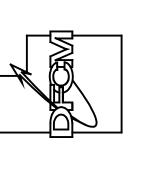
08308790

02-16-2009

Axis Job#

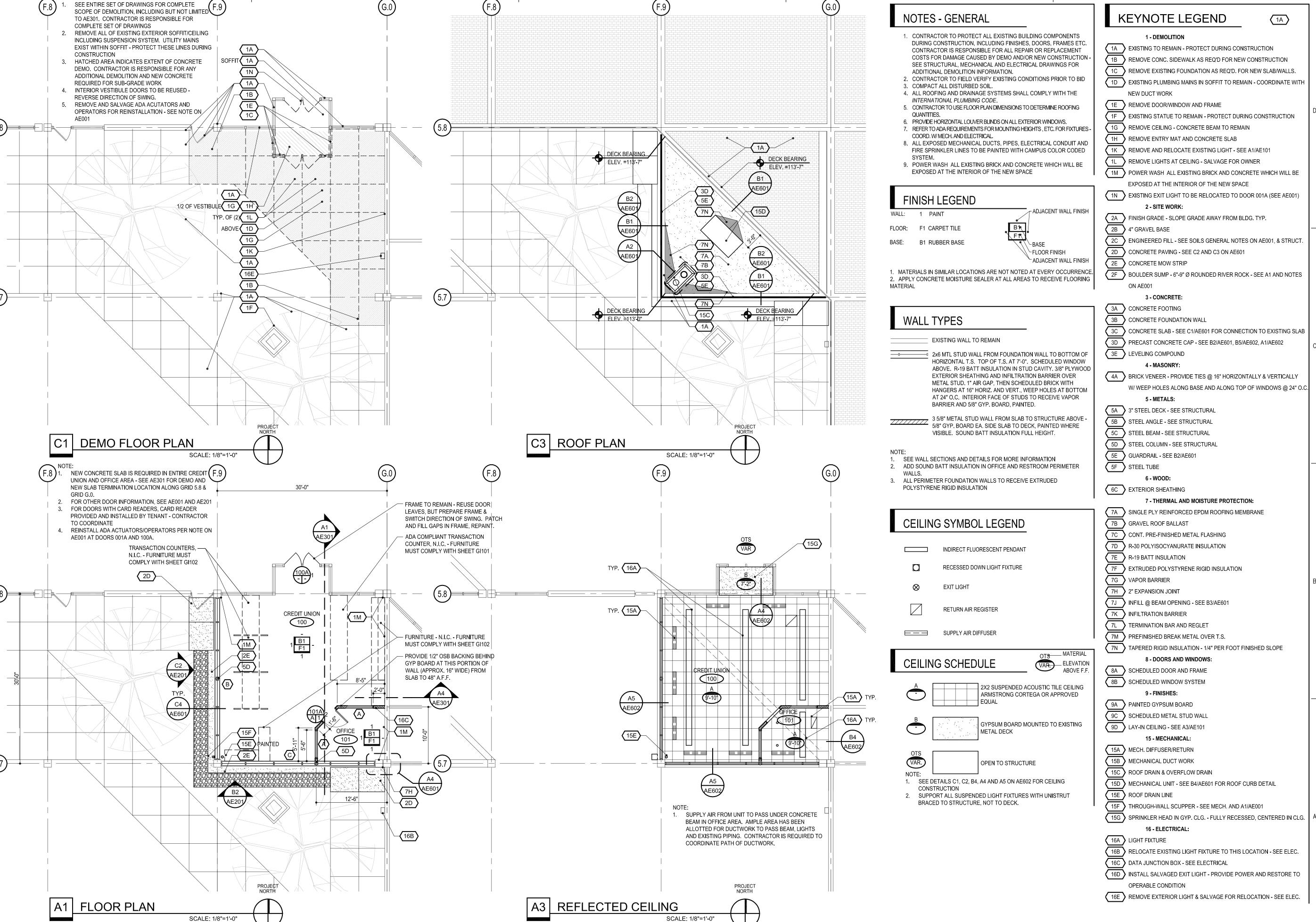
Drawn Checked

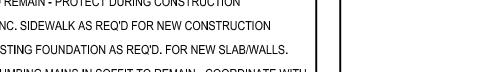
SITE DRAWINGS

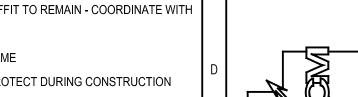












**AE101** 

0819

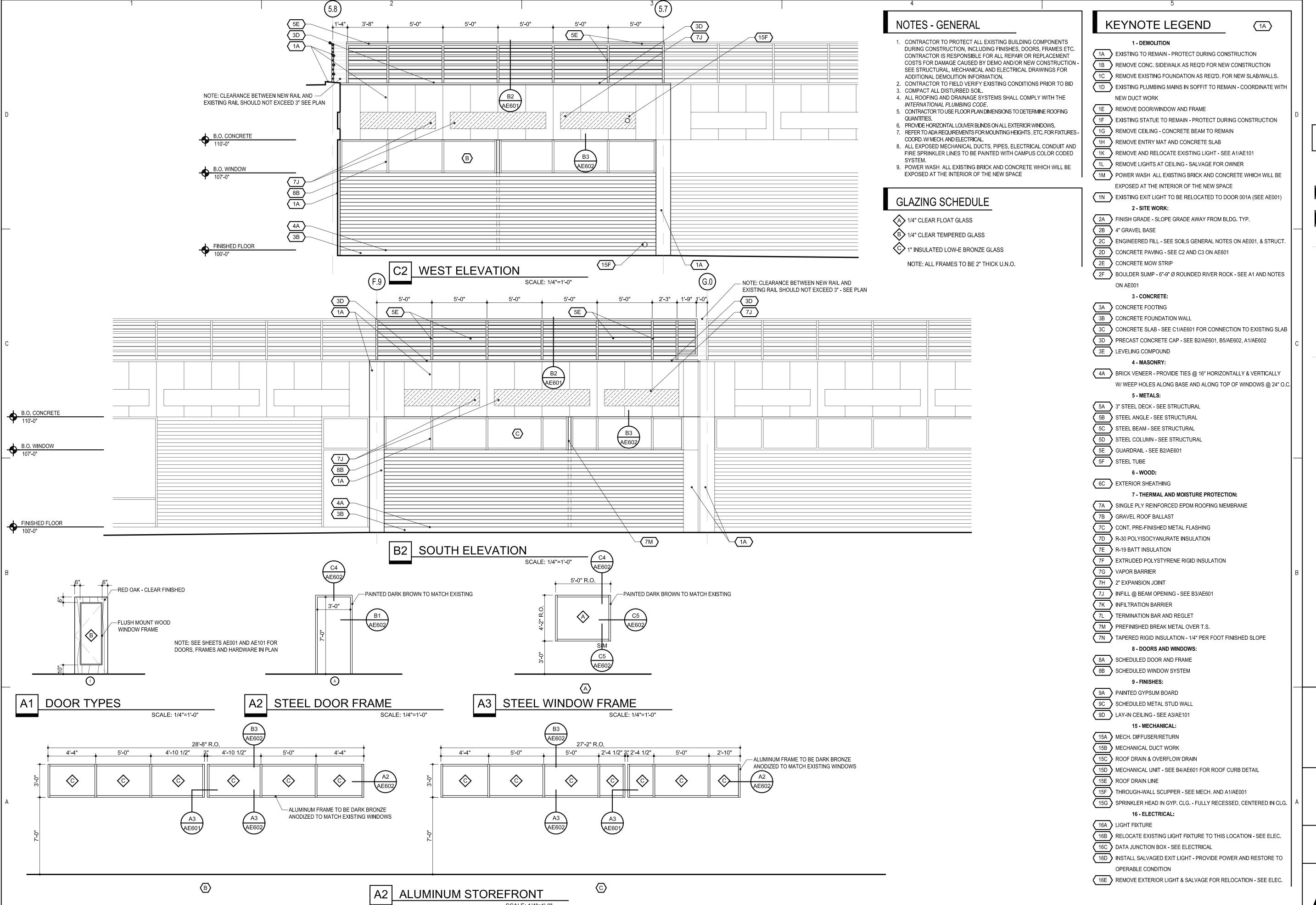
08308790

02-16-2009

Axis Job#

Drawn

Checked



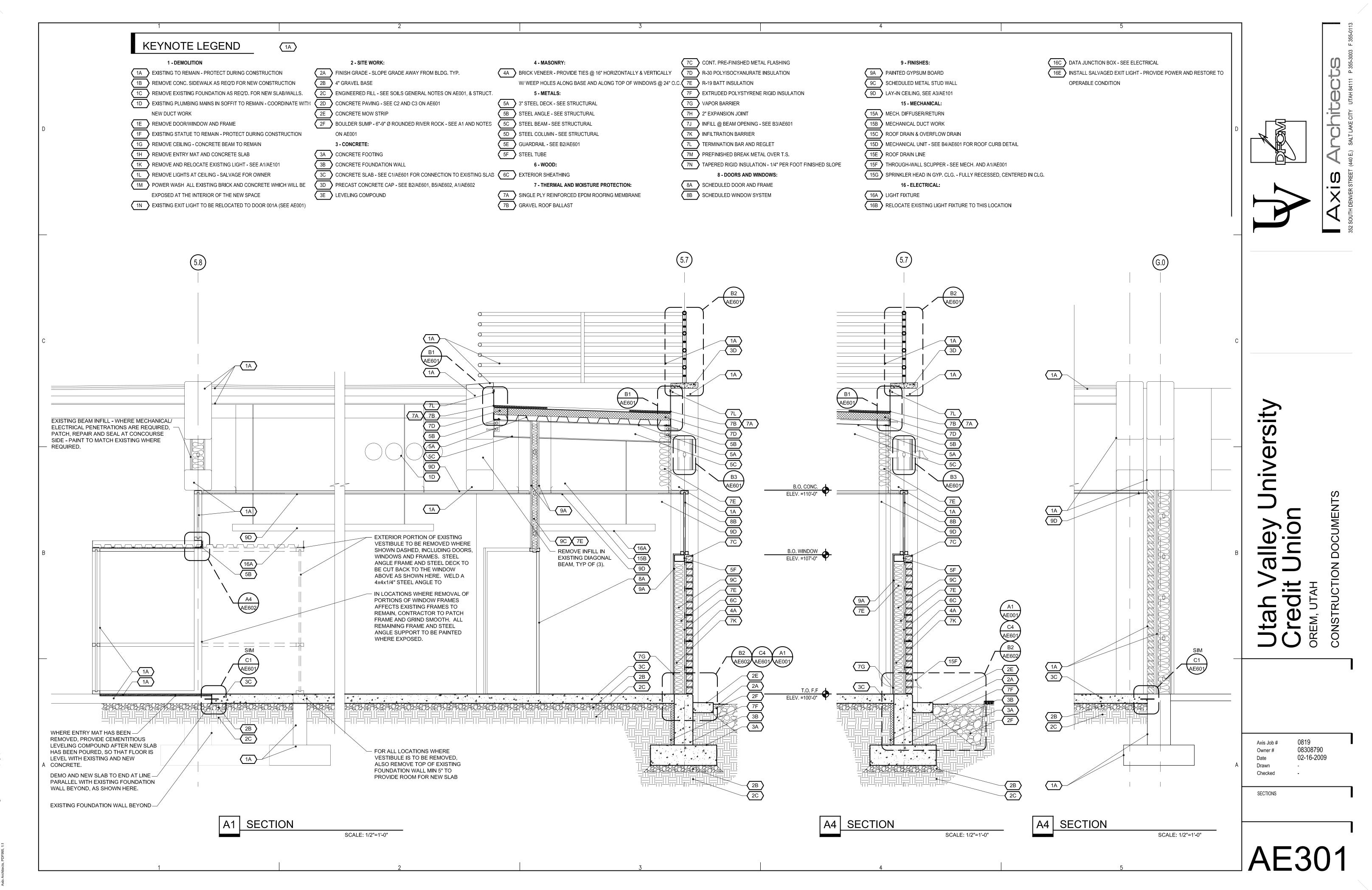


tah Valley University redit Union

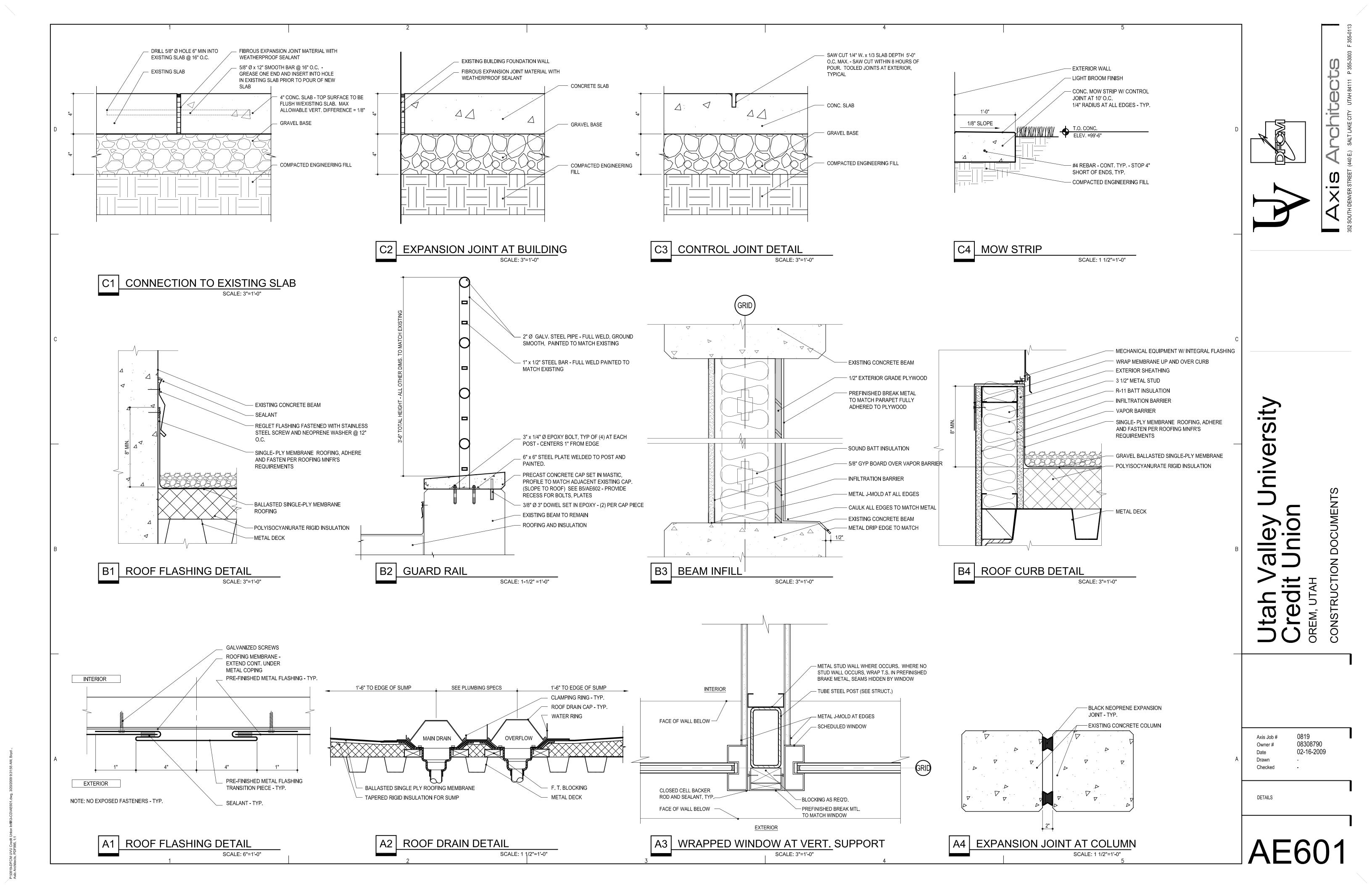
Axis Job # 0819
Owner # 08308790
Date 02-16-2009
Drawn Checked -

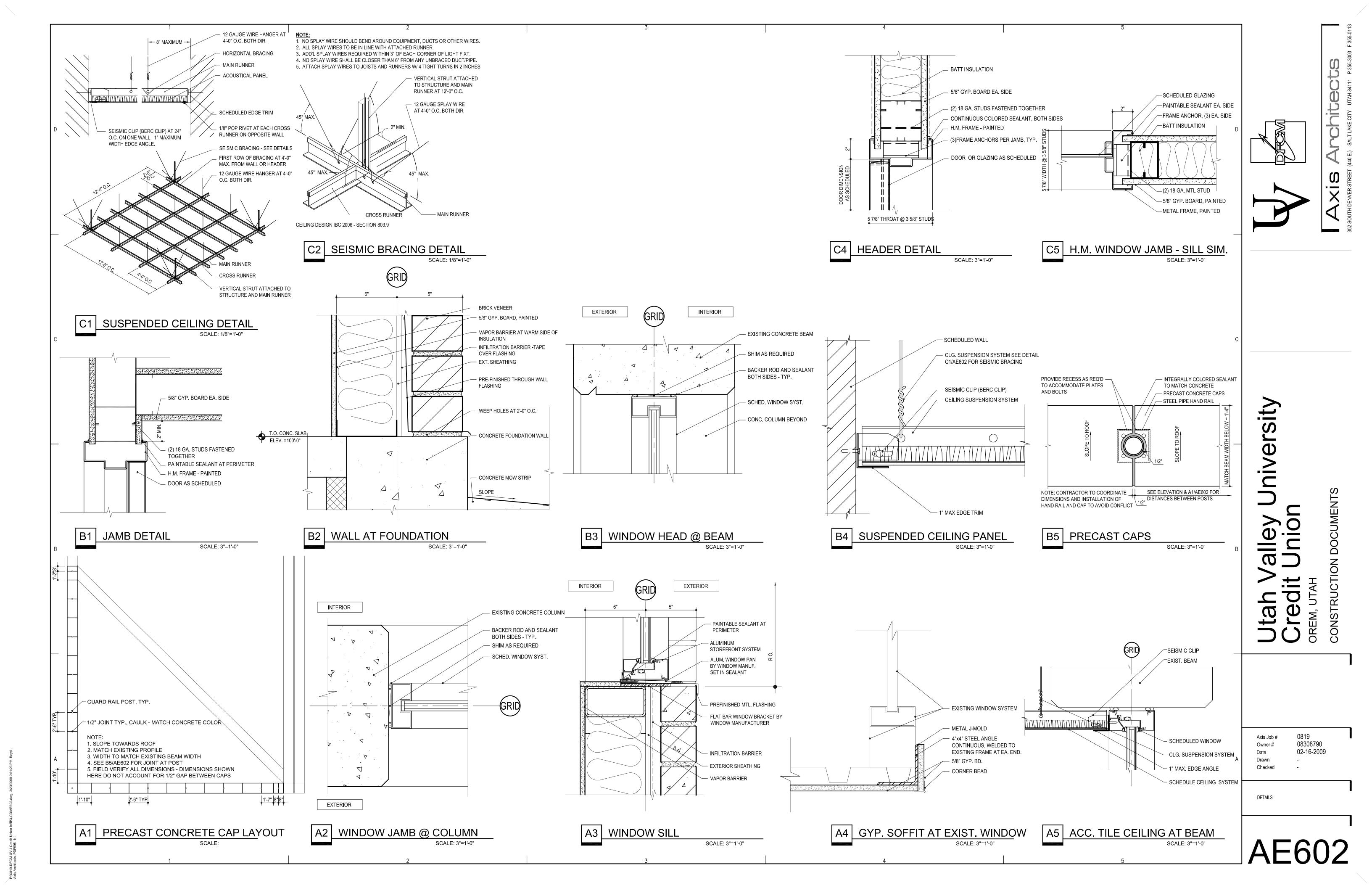
ELEVATIONS

AE201



P:0819-DFCM UVU Credit Union InflN3-CD\AE301.dwg. 3/19/2009 3:24:48 PM.





Bl. Governing Building Code: 2006 International Building Code

B2. Gravity Loading .....30 psf dead load Snow Loads Plus Snowdrift Pf= 33 psf Ce= 1.0 Ct= 1.0

- Seismic Design Category..D IE = 1.25 SDS = 0.801, SDI = 0.491, Ss = 1.16, SI = 0.487 Site Class = D
- Lateral Force Resisting System = Concrete shear walls Base shear = 0.17M R = 6F. Analysis procedure = Equivalent Lateral-Force Procedure
- B4. Wind velocity.......90 miles per hour (3 second qust speed) Net uplift force at roof equals 17 psf. Importance Factor Iw..... Cladding and Components.....21
- B5. Foundation A. Soil Bearing Pressure......1500 psf Assumed. B. Frost Depth.....30 inches.

#### II. Site Work

- SWI. A minimum of 6" of topsoil shall be removed from the entire building site including all vegetation and debris.
- SM2. Contractor shall over excavate 18" under all footings and 18" beyond edge of footing. An independent soils testing agency sháll verify a 1500 psf soil bearing capacity of the soil subgrade prior to installing the replacement fill as specified in sheet SEOOI notes SM3 through SMIO.
- SM3. All bearing earth to be undisturbed earth or compacted fill. The area on which the fill is placed must be frost free. The fill shall then be placed in layers not to exceed 8 inches in depth and compacted.
- SM4. All fill and back fill shall be compacted to a minimum of 95% of maximum relative density for footings and 90% for all other structural fill based on AASHTO TI80.
- SM5. Any fill to be placed under the building and footings shall be a well graded granular material within the limits of the following gradation, unless otherwise specified by Soils

Sieve Size	Percent Passir
4"	100
l"	60-90
#4	30-60
#40	10-30
#200	5-12

- SM6. All water shall be removed from foundation excavation prior to placing of concrete. Do not pour concrete under water.
- SW7. Any unusual soil conditions (water, clay, soft layers, etc.) encountered during excavation for footings shall be immediately brought to the attention of the architect and soils enainéer.
- SM8. All foundation excavations shall be protected from all detrimental changes in environmental conditions such as rain
- SM9. Contractor shall coordinate the architectural, structural, and civil drawings for top of footing elevations and footing steps and excavations.
- SMIO. Contractor shall verify all existing and future grades. Footings shall be poured to maintain the minimum frost protection or confinement indicated on details. Footing steps shall be provided as per typical details where required by site conditions.

## III. Concrete and Reinforcing

- CI. All work and materials shall comply with all areas of AC1318 and ACI 347 Publications and applicable ASTM Publications.
- C2. Compressive strength of concrete at 28 days shall be as follows: (only 1-grade of concrete shall be poured on the job at one time). Use type II cement in contact with ground.

<b>2</b> 1		_	
Minimum			
Compressive	%	Maximum	Specia
Strength(psi) Slump	Air Ad	ggregatelr	ıspectic
(At 28 Days) (+/- 1/2")	Entrainment <sup>7</sup>	ÍSIze Re	equired
Footings 3000 4	3%	l I/2"	ΝO
Foundations walls 4000 4	3%	3/4"	NO
Int.Slab on Grade 4000 3	3%	l I/2"	NO
Ext.Slab on Grade 4500 3	5 1/2% to 7	1/2%  1/2"	NO
water/cement ratio = .45 max.			

- C3. Hardrock aggregates shall conform to ASTM C-33. Their Maximum size shall be 3/4" except I" shall be used for footings and slabs on grade.
- C4. Admixtures
- A. Concrete mix shall include flyash as per ASTM C618 class "F" except that maximum loss on ignition shall be limited to 1% to yield specified quantities. Flyash replacement of cement shall be limited to 20% by weight.
- C5. The contractor shall submit mix design and 3, 7, and 28 days strength tests for review by the structural engineer before any concrete is poured at the job site.
- C6. All concrete that is placed by pumping shall be medium rangeplasticized with water reducing admixture which shall comply with specifications for chemical admixtures for concrete, ASTM designation C-494 non-chloride and shall be used in strict accordance with manufacturer's recommendations. Product specification publication shall be submitted to structural engineer for review.
- C7. Unless otherwise noted all reinforcement bars shall be securely anchored to the forms and spaced from them as follows: Minimum Coverage A. Cast against \$ exposed to earth......3 inches B. Concrete exposed to earth or weather:
- #6 though #18 bars.....2 inches #5 bar and smaller...... 1/2 inches C. Not exposed to weather or in contact
- with ground: slabs, walls, joists:.....3/4 inches
- C8. Reinforcing Steel A. All reinforcing steel shall be bent, detailed and chaired as per the "ACI Manual of Standard Practice for Detailing Reinforcing Concrete Structures."
- B. All reinforcing steel to be welded shall comply with ASTM C. All reinforcing steel shall be of new stock deformed bars conforming to ASTM A-615 grade 60 unless otherwise noted. Placement of bars in accordance with ACI 315 and ACI 318. Use bar supports per ACI 315 chapter 7 for all rebar and

- welded wire fabric. As per ACI 318, Section 7.5.1: "AII reinforcement shall be accurately placed and adequately supported before concrete is placed and shall be secured against displacement within tolerances permitted in 7.5.2." Wet stabbing reinforcing is not allowed.
- D. Unless otherwise indicated, all anchors welded to steel plates or anales that are embedded in masonry or concrete shall be deformed bar anchors conforming to A36 Steel or ASTM A706.
- E. Minimum standard rebar lap lengths: #3=19" #4=25" #5=31" #6=37" #7=54" #8=62" #9<sup>1</sup>=70" #10=78" #11=85". Epoxy coated bar laps, multiply above values by 1.2. For epoxý coated rebars or wires with cover less than 3db or clear spacing less than 6db, the laps shall multiply the above values by 1.5. Lightweight concrete bar laps, multiply above values by (ie. #6=37"x1.3=48").
- If more than 12" concrete is below rebar (beam top reinforcing), multiply above values by 1.3. (ie. #5=3|"x|.3=47") All vertical reinforcing bars (unless noted otherwise) shall be doweled to footing with 90 degree standard hook.

otherwise n	oted on drawings)	
Thickness	Horizontal Reinf	Vertical Reinf
6"	#4 at 16" o.c.	#4 at 18" o.c.
8"	#4 at 12" o.c.	#4 at 18" o.c.
10"	#4 at 15" o.c.	#4 at 18" o.c.
	each face	each face
l2"	#4 at 12" o.c.	#4 at 18" o.c.
	each face	each face
14"	#4 at 12" o.c.	#4 at 18" o.c.
	each face	each face
16"	#4 at 12" o.c.	#4 at 18" o.c.
	each face	each face
18"	#4 at 10" o.c.	#4 at 18" o.c.

F. Reinforcing for concrete walls as follows:(unless

- each face each face 5. All dowels shall have at least 38 bar diameter embedment. H. Break out dowels may be used for convenience of contractor, however dowels shall be Grade 40 and spacing of dowels shall be decreased by 1/3.
- Provide corner bars at all intersecting corners. Use same size bar and spacing as horizontal wall reinforcing. J. Add 2-#5 bars around all openings (unless otherwise noted) and extend 24" beyond corner of openings. Add also 2-#5 x 4'-O diagonally at corners. For reinforcing over opening see opéning details on drawings.
- K. When called for on the drawings or when directed by engineer bars that are to be epoxy doweled are to be put in holes larger than the bar diameter (1/4" larger for rebar and 178" larger for threaded bars). The holes shall be ten bar diameters deep for 4000 psi concrete or above and 15 bar diameters for concrete below 4000 psi and masonry. Fill holes with "Hilti" Hi-Mod epoxy gel (or equal as approved by engineer). All epoxy dowels and epoxy anchors are to be either threaded or deformed bars as per drawings. Apply epoxy as per manufacturer's recommendations. Mixing shall be done using a power mixer. For cold weather application gel shall be mixed at 70 degrees and kept at 40 degrées for 72 hours after application. Impact type drilling tools shall not be used for drilling holes or tightening anchors and shear bolt nuts into or through brick. SPECIAL INSPECTION IS REQUIRED.
- C9. Concrete tests shall be made by testing laboratory approved by the architect, with copies of all reports being mailed to the architect and the contractor. In general, one test shall be made for each 50 cubic yards of concrete, or each days' pour if less than 50 yards, or as directed by Architect. Each test shall consist of 5 cylinders of which one shall be tested at 7 days, 2 tested at 28 days, and two retained in reserve for later tests, if required. Specimens shall be made and tested in accordance with ASTM C-172, C-31 and C-39 standards. Slump and Air entrainment test shall also be made with each set of cylinders taken. Contractor shall provide the cylinders. The testing laboratory shall transport all cylinders. The owner shall pay for all tests.
- CIO. Before concrete is poured, check with all trades to insure proper placement of all openings, sleeves, curbs, conduits, bolts, inserts, etc. relating to work.
- CII. Drypack concrete shall be one part Portland cement and one part sand with sufficient water to allow a small amount of paste to come to the surface. Use for grouting joists and beam pockets unless otherwise noted.
- C12. Under steel column base plates, concrete grout shall be non-shrink with sufficient water to allow pouring. Ultimate compressive strength (F'C) at 28 days shall = 4,000 psi. Grout shall be non-metallic, meeting CRD-C621 and in accordance with the manufacturer's published specification for mixing and placing.
- C13. Formwork not supporting weight of concrete, such as sides of beams, walls, columns, and similar parts of the work, may be removed after cumulatively curing at not less than 50 degrees for 24 hours after placing concrete, provided concrete is sufficiently hard to not be damaged by form removal operations, and provided curing and protection operations are maintained. Formwork supporting weight of concrete, such as beam soffits, joints, slabs and other structural elements, may not be rémoved in less than 14 days or until concrete has attained 75% of its design minimum compressive strength at 28 days. Support formwork from facing materials with structural members spaced sufficiently close to prevent deflection. Fit forms placed in successive units for continuous surfaces to be accurately aligned free from irregularities and within allowable tolérances. Provide 1/16" camber per every 2.5 feet in concrete formwork
- Architect/Engineer. CI4. All exposed to view concrete shall be stoned smooth while green, or as directed by Architect. No grout plaster shall be Exposed to view concrete shall have 3/4" deep "V" groove

of exposed to view concrete unless otherwise indicated by

- placed vertically at 8'-0" o.c. or as directed by Architect. CI5. Protect freshly placed concrete from premature drying and excessive cold or hot temperature as per ACI 318 and maintain without drying at a relatively constant temperature for a period of time necessary for hydration of cement and proper
- C16. Cold weather curing and protection requirements for concrete shall conform to the requirements of ACI 306 when depositing concrete at freezing temperature or below, the concrete mix shall have a temperature of at least 50 degrees but not more than 80 degrees. The concrete shall be maintained at a temperaturé of not less than 50 degrees and in a moist condition for not less than 7 days after placing or as directed by the structural engineer. The use of chemicals or additives to prevent freezing will not be permitted. Contractor shall prevent frost from penetrating under ootings or interior slabs on grade or postponé concrete pour. Refer also to specifications and to any directive by structural engineer for additional cold weathér requirements.
- CIT. Architect/Engineer shall be notified 48 hours prior to pouring any concrete in order to observe reinforcing
- C18. All concrete shall be properly vibrated in place using internal vibrating rods.
- CI9. Unless otherwise noted all concrete slabs apply a liquid type membrane forming curing compound complying with ASTM C 309,

tupe I, class A Moisture loss shall be not more than 0.055 ir./sq. cm. applied at 200 sq.ft./qal. When temperature is 75 degrees or more during placement do not use membrane but moist cure slab for 7 days continuous minimum or see ACI Committee 305 Report "Hot Weather Concreting". Submit method of curing for appróval.

# IV. Masonry

- Ml. A. Before any masonry work begins on the site, the block supplier shall submit a letter of certification to the contractor, architect, and structural engineer stating the strength of the structural masonry used and showing its conformance to structural drawings and specifications.
- B. All face brick shall be burned clay grade SM conforming to IBC Standard. C. All testinas shall meet the requirements shown in IBC

prism test prior to construction.

- Section 2105, Quality Assurance. M2. All mortar shall have 2500 psi compressive strength after 28 days. If Type "S" mortar is used, see note M-1 and submit
- M3. Grout A. Grout shall have an 8" to 10" slump using 3/8" max. aggregate. Size and height limitations of the grout space or cell on the average shall not be less than shown in ACI 530-05, Table I.T.6.I. Provide cleanouts for pours higher than 5' as per IBC for high lift grout procedure and must meet the requirements of ACT 530'.1
- B. Grout shall be consolidated before loss of plasticity in a manner to fill the grout space. Grout shall be vibrated with an internal pencil vibrator at each lift. All grout to be properly vibrated during placement and again before final set using an internal pencil type vibratina rod.
- C. Minimum compressive grout strength = 3000 PSI.
- M4. Construction A. Grouted masonry construction shall comply with IBC Chapter 21.
- 3. Step unfinished work for later joining with new work. Vertical toothing shall not be permitted unless approved
- by Structural Engineer. Provide masonry wall crack control joints at 40'-0" o.c. maximum unless noted otherwise on drawings. When masonry wall is stack bond type construction, provide crack control joints at 12'-0" o.c. maximum and at all wall plane changes and jambs. Coordinate location of all
- crack control joints with Architect. D. Impact type drilling tools shall not be used for drillina holes or tightening anchors and shear bolt nuts into or through brick.

# V. Structural Steel

- SI. All structural steel work shall comply with the latest edition of the AISC "Standard Specifications for the Design, Fabrication and Erection of Structural Steel for Buildings" and "Code of Standard Practice". ASTM A-992 FY=50 ksi minimum specified for structural shapes; A36 steel for miscellaneous steel; ASTM A-500 grade B for structural tubes; ASTM A-53 for structural pipes; typical U.N.O. Cambering shall meet the standard mill practice shown on AISC "Manual of Steel Construction".
- 52. Shop paint and remove all rust, oils, mill scale. Apply one coat zinc chromate 2 dry mills thick. Provide touch up field coat at all abraded and welded areas, two dry mills thick. All steel exposed to moisture conditions shall be galvanized. (Follow SSPC - Paint 20; ASTM A 780)
- S3. Unless noted otherwise, all structural steel to steel bolted connections shall use 3/4" diameter high strength bolts conforming to ASTM A-325 (N) and shall have carbonized washers under the turning unit. All other bolts shall conform to ASTM A-307. A-325 bolts are to tightened by either turn of the nut method or load indicator washers. All A-325 bolt tightening shall be supervised by an independent testing agency who shall certify in writing that all bolts are properly tightened.
- S4. Unless noted otherwise on plans, all steel floor beams with spans areater than 25' and all steel roof beams with spann greater than 40' shall have L/480 positive camber.

- A. All welding to be made by certified welders using E-70 series electrodes. (For all welding of ASTM A-572 steel, E70X8 electrodes shall be used and welding shall be as per AMS DI.I "Structural Melding Code".)
- B. All welders to be currently certified for all type of welds on this project under latest AWS DI.I, Structural Weldina Code. Welders to have passed the Qualification Requirements within preceding 6 month period. C. Welds made against concreté are to be done under the supervision of an approved testing agency and that fillet
- wėlds should be made in 1/8" passes 2" long at 4" o.c D. All steel to steel connections not shown boilted which is continuous, shall be welded to develop full strength capacitu of connectina members.
- Minimum size of fillet weld (unless noted otherwise on drawings):

Material thickness of Minimum size of

tnicker part Joinea	of fillet weld
to 1/4" inclusive over 1/4" to 1/2" over 1/2" to 3/4" over 3/4" to 1 1/2"	1/8" all around 3/16" all arou 1/4" all arou 5/16" all arou

- . Unless otherwise noted, all structural steel to steel connections shall be made in such a manner to develop full shear capacity of connecting members as per AISC specifications.
- G. Field paint all abraded and welded surfaces for joists and metal deck. Use SSPC - Paint 20 (Galvanic). H. Unless otherwise indicated, all anchors welded to steel plates or angles that are embedded in masonry or concrete shall be deformed bar anchors conforming to A36 Steel or
- All deck bearing angles or plates shall have butt welds at splices typical unless noted otherwise.
- J. All full penetration welds shall be tested by x-ray or ultrasonic procedures by an independent testing agency approved by the architect. Where testing procedures are not physically possible, visual inspection before and during welding shall be done by an independent testing
- K. 10% of all shop and field welds shall be done under the direct supervision of an independent testing agency approved by the architect and tested by magnetic particle procedures.
- Copies of all tests results are to be sent to structural engineer. Welds found to be defective shall be corrected at no extra cost to the owner M. All weld testing shall be paid for by the owner.
- S6. Steel Deck A. All metal deck shall meet requirements of Steel Deck Institute (SDI) for wide rib deck. See drawings for type
- of deck. Manufacture shall be a member of SDI. B. Deck manufacturer shall have ICBO certification showing lateral shear capacities of deck equaling 1400 plf TYPICAL and 2100 plf for 18 gage deck, with an F
- (Flexibility Factor) less than 10. C. Provide 18 gage sheet metal reinforcing at all valleys,

hips, ridges, deck changing directions, and openings through metal deck. For openings 15" and larger frame opening with angle  $3 \times 3 \times 1/4$  unless otherwise noted. End laps to occur at supports and shall have minimum lap of 2". The deck shall be attached to all supports and the

- side lap of adjacent units. D. All deck splicés shall occur over supporting members and shall have a minimum of 4" of flat bearing surface
- E. Deck Welding (unless otherwise noted): a. Supports parallel to deck 3/4" diameter puddle
- welds at 12" o.c. b. Supports perpendicular to deck 3/4" diameter at
- each valley. . Top seam welds | 1/2" at 12" o.c. Deck shall be
- crimped prior to all side or top seam welding.
- d. Welder shall be certified as a light gage welder in accordance with AMS. e. Use E60 electrodes.
- a, b, and c are minimum deck welding, deck supplier is to indicate deck welds on shop drawings to develop stated shear capacities. Unless noted otherwise on drawings all deck shall bear on and be welded to continuous angle  $3 \times 3 \times 1/4 \times cont.$  at all deck boundaries fastened to concrete or masonry wall
- with weld plates as per typical details or 3/4" diameter  $\times$  8"  $\times$  3" 'J-bolts at 16" o.c. Provide angle 3 1/2  $\times$ joist depth  $\times$  3/16 under all changes in deck direction. 6. All continuous deck bearing angles shall have full
- penetration welds at splicēs. Architect/Engineer shall be notified 48 hours prior to application of roofing material in order to observe deck
- I. Roof deck shall be designed for 17 psf uplift force minimum, U.N.O
- ST. Steel Studs

A.	Structural steel studs	shall be as :	specified in	this note
	and shown on drawings	with minimum	i effective p	oroperties

			EFFECTIVE
Stud Size	Gage	Gross Are	ea (ln.2) IXX (in.4)
6"x   5/8	Gage 18	.43	2.22
6"x   5/8	16	.54	2.76
4"x   5/8	16	.42	1.06
3 5/8 x 1 5/8	16	. <del>4</del> I	.84

- B. All studs shall be spaced at 16" o.c. unless noted otherwise and to be standard painted unless otherwise
- Fy for 16 ga. and heavier material..50 Ksi Fý for 18 ga. and lighter material..33 Ksi C. Unless otherwise noted all bridging to be 1 1/2" minimum x 1/8" minimum x continuous cold rolled channels positioned through stud punch-outs and weld attached on both sides to stud punch-out. Bridging shall be spaced at 4'-6" o.c. to match punch-outs. Where punch-outs do not
- line up use weld attached bridge clip angles. D. All track to be stud size by 1 1/2" flange by 16 gage standard painted unless noted otherwise. Attach track to concrete slab at 16" o.c. using .177" diameter x 1 1/2" powder driven fasteners. Tracks and bridging to have = 33,000 psi.
- All splices of structural studs to be full strength. Use 2'-0" minimum section lapped I'-0" above and below splice fully welded. Alternate all splices 24" minimum. Spot oaint all welds after cleaning Load bearing stud walls must be fabricated with the stud
- ends seated against the track web. Full web and flange bearina must bē provided. G. All structural studs shall be welded to top and bottom tracks with  $1/8" \times 1 1/2"$  fillet at each stud flange and
- S8. Steel columns and beams that are located inside concrete or masonry walls or that are in contact with the walls shall have déformed bar anchors (KSM or Nelson) welded to the steel members at the shop. The deformed bar anchors (abbreviated DBA) shall match the size and location of the horizontal or vertical wall rebar that is interrupted by the steel members and shall be of such length to lap 38 bar diameters with the concrete wall reinforcina and 48 bar diameter with the masonry wall reinforcing. Steel columns which are located inside the wood wall shall have a 3x stud with  $5/8" \times 2 1/2"$
- 59. Headed stud type shear connectors shall conform to ASTM A-108 grade 1015 or 1020 cold finished carbon steel with dimensions complying with AISC specifications and as shown on drawings.

## VII. General Conditions

 $1/8" \times 3"$  at stud web.

Welaea stua at 40° o.c. 11P. U.N.O.

- GI. If discrepancies exist between specifications, general notes and drawings, call the Engineer (801-575-8223) to resolve the conflict or use the more expensive option.
- 62. All dimensions on structural drawings shall be checked and verified against architectural drawings. All dimensions relating to existing site, buildings, installations or construction shall be field verified, all discrepancies shall be submitted to the architect. Do not proceed with fabrication and erection of materials affected until discrepancies are resolved.
- 63. All omissions or discrepancies in the working drawings and or specifications shall be brought to the attention of the Architect and/or Structural Engineer before proceeding with any work involved.
- A. Until all permanent members, including walls, slabs, floors and roof are in place and all connections are completed, stability of structure and all parts thereof shall be contractor's responsibility. During construction contractor shall keep construction loads within the design load limits shown on drawings. After construction is completed building owner shall keep loads on roof and
- floor within design límits shown on drawings. B. Do not backfill walls until floor at top of wall is in place or adequate temporary bracing is provided. Contractor shall provide shoring design calculations and drawings stamped by a Utah Reqistered Professional
- 65. All Construction shall be in accordance with the IBC 2006 and
- 66. Unless a more stringent requirement is specified, design all members with minimum Live Load deflection of L/360.

supplements unless a higher standard is called for.

and around job site and or adjacent properties. 68. Observation visits to the site by Bsumek Mu and Associates Field Representative shall neither be construed as inspection

nor approval of construction.

67. Contractor shall be responsible for safety and protection in

- 69. Contractor shall provide 5 sets of shop drawings for review by structural engineer for: all reinforcing bars, structural steel, and all prefab. structural items (including structural calculations) and shall also be approved by the governing authority prior to installation. See Section 106.3.4.2.
- GIO. All openings through floors and walls shall be verified with architectural, mechanical and electrical drawings. Do not cut openings in concrete or masonry without approval of structural engineer and architect.

GII. Contractor/Window/Door - Supplier shall provide 1/2" minimum vertical movement capability in frame system. Window/Door- Supplier shall design for wind load specified under "Basis for Design" and shall submit professional engineer stamped design calculations showing compliance with Wind Load Capacity and vertical movement capacity.

- 612. Seismic bracing of electrical, mechanical equipment, ducts, piping, and ceiling system shall be designed by their respective supplier and stamped by a Utah Professional Engineer and submitted for design review and should be submitted to the governing authority for approval prior to
- GI3. The appearance of all exposed structural elements shall be approved by architect or owner. A'll' blemishes, dents, or shipping damage in structural elements that are expose'd to view shall be repaired before erection and shall be approved by the architect. All sweeps in beams joists, and girders greater than 1/2" shall be corrected. Repairs shall be made at no cost to the owner. For tolerances in wide flange shapes, follow AISC specifications.
- 614. Mechanical ducts, piping, and electrical conduits which supports from the bottom chord of steel joist, should be limited to 50 lbs. for single clamp on one side within 6" of each panel point.
- GI5. Where the ducts and pipes are running parallel to the roof joist and the weight is more than 50 plf an additional joist

#### VIII. Special Inspections and Structural Testing for Seismic Resistance

Special inspections shall be done by Special Inspectors that are qualified and approved for each area of work stated below or as required by the Building Official. All special inspections shall be paid for by the OMNER. The special inspector shall observe the work assigned for conformance with the approved design drawings and specifications. The special inspector shall submit reports to the owner, the Building Official, the Contractor, Architect, and Bsumek Mu and Associates. The special inspectors shall conform to and fulfill all other responsibilities as outlined in SECTION 1704, 1707, 1709 of the IBC 2006. The special inspector shall submit written reports of observations stating time, date, location of work and observation of work being done.

- A. See note C2 for concrete above 2500 psi not requiring special inspections. Some higher strength concrète is specified for durability only.
- B. Special inspections are required for the following work: Concrete and reinforcing placement. Except for the
- following conditions: a. For foundations satisfying requirement of IBC 2006, Table 1805.4.2.
- Non-Structural slab on grade. Site work concrete where no special hazards exist. Bolts installed in concrete where indicated on drawings. Welding except for the following:

a. Welded connections made by an approved fabricator's

- shop need no special inspection. When Building Official allows, periodic inspections for floor and roof deck welds and composite welded stud.
- b. Periodic inspection may be done as outlined on drawings. See IBC 2006, Table 1704.3. Hiah strenath bolting inspection for bearing type
- connections need be done only after installation Section 1707. Special inspections for seismic resistance.
- 6. All rebars and threaded rods epoxy doweled into concrete and/or arouted CMU. C. Structural testing for seismic resistance, see Section 1708
- of the IBC 2006. D. Structural observations shall be done according to Section 106.3.4.1. All the seismic resisting elements shall be inspected, including footings.



# SPECIAL INSPECTION AND TESTING (IBC 1704)

Indicate required Special inspections for project by checking the appropriate boxes:

FABRICATORS (IBC170	04.2)		
Approved Fabricator	Fabricators Name:		
Unapproved Fabricator	Fabricators Name:		
	In-plant inspections		
	Steel Construction	─ Welding	☐ Details
STEEL (IBC1704.3)			

#### Single-pass fillet welds > 5/16" Continuous Single-pass fillet welds ≤ 5/16" Continuous ⊠ Periodic

WELDING (1704.3.1)

Details (1704.3.2)

High Strength Bolting(1704.3.3) 🛛 Continuous 🔲 Periodic

CONCRETE CONSTRUCTION	ON (IBC 1704.4)		
Item	17	I	Reference/Comments
Materials (1704.4.1)	Continuous	□ Periodic	
Steel placement	Continuous	□ Periodic	
Bolts prior & during placement	Continuous	□ Periodic	
Use of required design mix	Continuous	□ Periodic	
Concrete sampling for strength	Continuous	Periodic	

#### temperature of concrete SOILS CONSTRUCTION (IBC1704.7)

JOILD CONSTITUTION (	(1001/01.7)	
Item		Reference/Comments
Site preparation	Continuous	□ Periodic     □
Structural fill material	Continuous	Periodic
Structural fill lift thickness		Periodic
Structural fill soil densities	Continuous	Periodic

# Material and instillation

EPOXY (IBC1704.13)

test, slump, air content, and

Special Inspectors Shall:

drawings, specifications and applicable codes. IBC 1704.1.2

 Be approved by the Building Official prior to performing any duties; • Provide proof of licensure as a special inspector by the State of Utah for each type of inspection;

- . Inspection reports are to meet the requirements of IBC 1704.1.2 and DFCM standards;
- . Inspection reports are to be submitted to the code consultant, architect, DFCM project manager, and the State of Utah Building Official within 48 hrs. of inspections; • A final inspection report shall be submitted following completion of the project documenting the types of special inspections performed and a statement indicating that the structure is in compliance with the

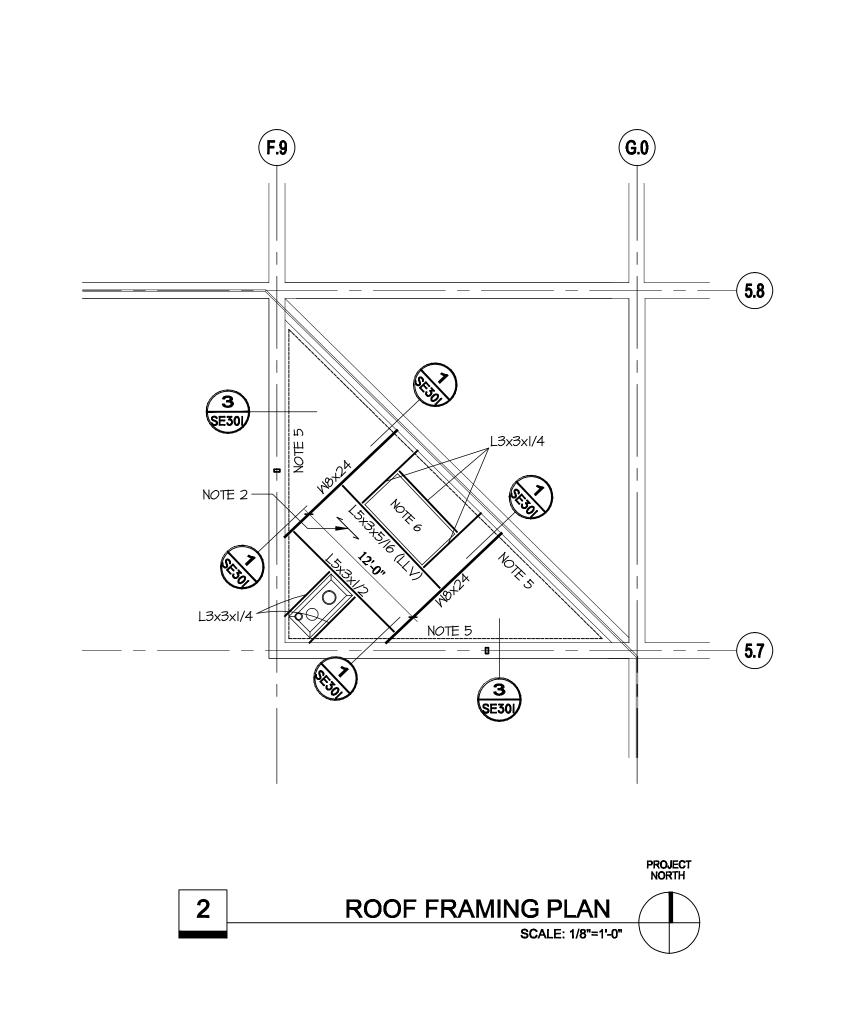
S **(1)** O

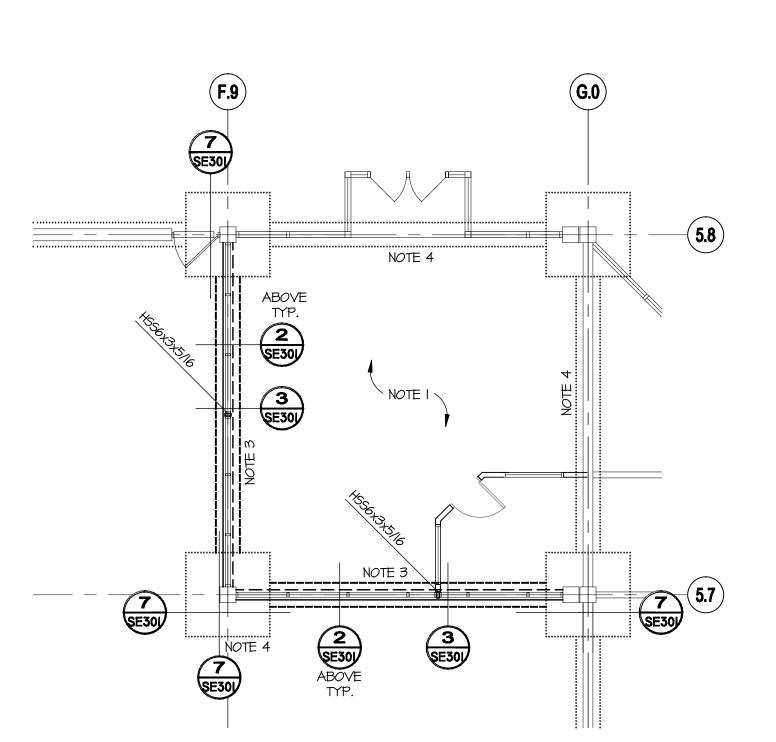
/1 $\setminus$  3/9/2009 - PLAN REVIEW RESPONSE

Owner# 3-02-2009

STRUCTURAL GENERAL NOTES

Drawn

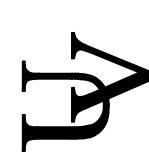




1 FOOTING & FOUNDATION PLAN SCALE: 1/8"=1'-0"

# PLAN NOTES:

- I. 4" CONCRETE SLAB ON GRADE OVER 4" GRAVEL BASE.
- 2. 3" x 16 GAGE METAL ROOF DECK.
- 3. 2'-0" WIDE x 12" THICK x CONT. CONCRETE FOOTING WITH (2) #4 x CONT. LENGTHWISE.
- 4. EXISTING FOOTING.
- L4x4x5/I6xCONT. LEDGER BOLTED TO 3/4" DIA. x 8" THREADED RODS EPOXIED INTO CONCRETE @ 24" O.C. FULL LENGTH OF CONCRETE BEAM. AT CORNERS MITER AND BUTT WELD TOGETHER.
- 6. 600# MECHANICAL UNIT. SEE MECHANICAL DRAWINGS FOR EXACT SIZE AND LOCATION. SEE DETAIL 5/SE30I FOR FRAMING.

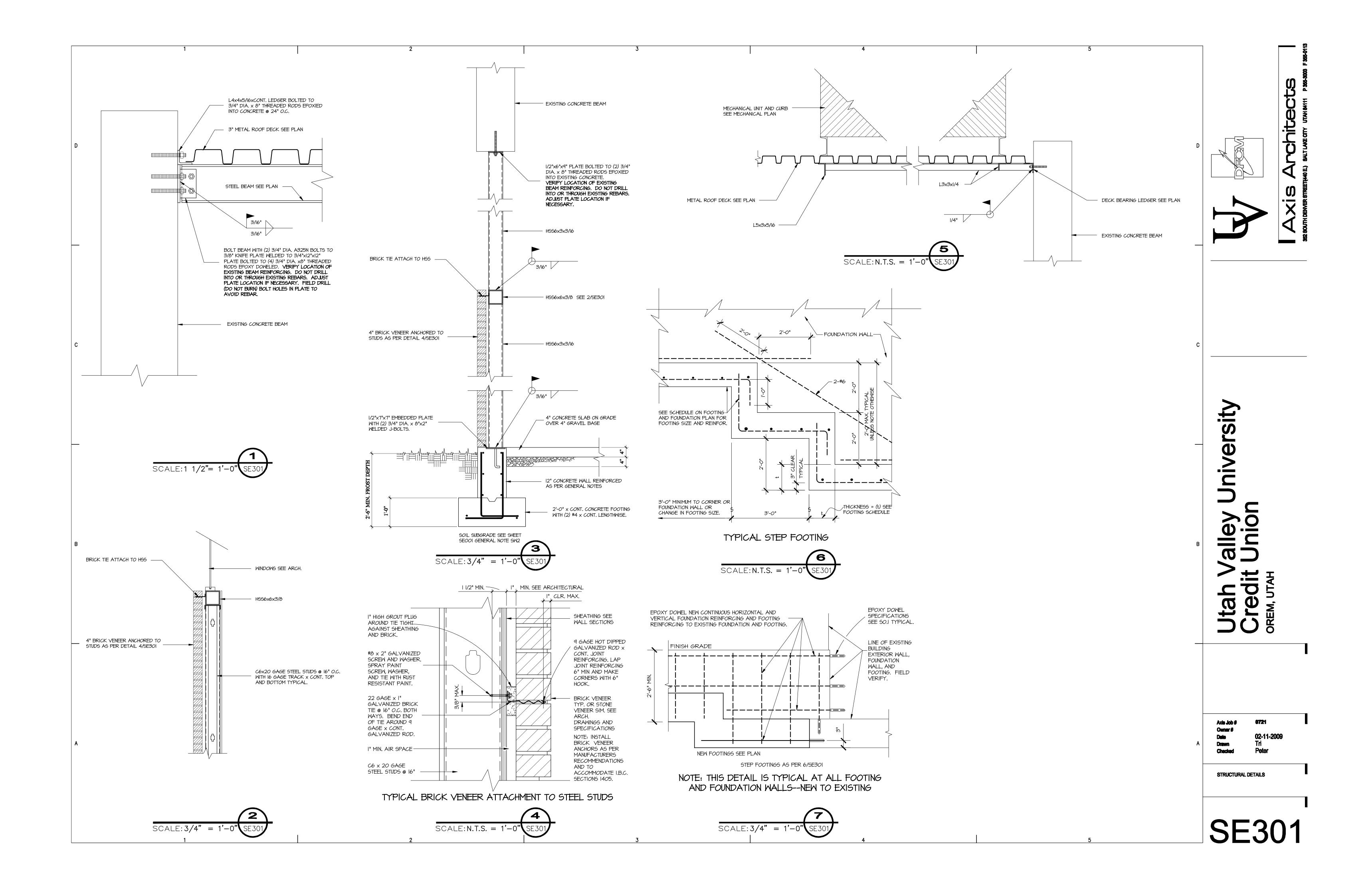


Jtah Valley University Sredit Union

Axis Job # 6721
Owner #
Date 02-11-200
Drawn Tri
Checked Peter

FOOTING & FOUNDATION, AND ROOF FRAMING PLAN

SE101



VENT-AUTO

FLOW SWITCH

CONCENTRIC REDUCER

REDUCER

**ECCENTRIC** 

REDUCER

**─** 

2-WAY BLOW

2-WAY BLOW PATTERN

UNIT HEATER

1-WAY BLOW PATTERN

DUCT SMOKE DETECTOR

PATTERN

# LINETYPES CONT

ACID VENT

WASTE

BOILER BLOW

BOILER FEED WATER

CARBON DIOXIDE

COMPRESSED AIR

CHILLED WATER SUPPLY

CHILLED WATER RETURN

CONDENSER WATER SUPPLY

CONDENSER WATER RETURN

DOMESTIC HOT WATER (DHW)

DOMESTIC HOT WATER RETURN

DEIONIZED WATER SUPPLY

DEIONIZED WATER RETURN

EXISTING PIPING TO BE

GLYCOL PIPING SOLUTION

FUEL OIL SUPPLY

FUEL OIL VENT

NATURAL GAS

HELICOPTER FUEL RETURN

HIGH PRESSURE DOMESTIC

HEATING HOT WATER RETURN

INSTRUMENT AIR AT PRESSURE

LOW PRESSURE CONDENSATE

LIQUIFIED PETROLEUM

LOW PRESSURE STEAM

MEDICAL AIR AT PRESSURE

MEDICAL AIR

MEDIUM PRESSURE

MEDIUM PRESSURE

CONDENSATE

STEAM

MAKE UP

WATER

**MEDICAL** 

NITROGEN

----N20-----

\_\_\_\_\_0X\_\_\_\_

——0X 120——

NITROUS OXIDE

MEDICAL OXYGEN

PUMPED CONDENSATE

MEDICAL OXYGEN AT PRESSURE

HELICOPTER FUEL

HIGH PRESSURE

CONDENSATE

HIGH PRESSURE

HEATING HOT WATER

INSTRUMENT AIR

INDICATED

VACUUM

STEAM

WATER

GLYCOL HEAT RECOVERY PIPING

**EXISTING PIPING** 

REMOVED

DOMESTIC COLD WATER

(DHWR)

CHEMICAL

	RO	REVERSE OSMOSIS WATER SUPPLY
	ROR	REVERSE OSMOSIS WATER RETURN
	RD	ROOF DRAIN
	RDO	ROOF DRAIN OVERFLOW
	RL	REFRIGERANT LIQUID
	——RS——	REFRIGERANT SUCTION
		SEWER (BELOW GRADE)
		SEWER (ABOVE GRADE)
	——SW——	SOFT DOMESTIC WATER (SW)
	V	VACUUM
Ī		

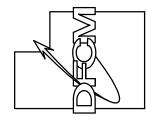
---- VENT (SEWER)

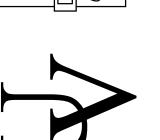
# MECHANICAL GENERAL NOTES

- 1. PROVIDE BALANCING DAMPER AT EACH BRANCH TAKE-OFF TO SERVE DIFFUSER OR GRILLE AS WELL AS WHERE INDICATED.
- 2. COORDINATE EXACT LOCATION OF DUCTS WITH STRUCTURAL MEMBERS, LIGHTS, REFLECTED CEILING, CABLE TRAY, PLUMBING, MECHANICAL PIPING, FIRE PROTECTION, ETC.
- 3. BRANCH DUCTWORK SHALL BE SIZED TO MATCH THE NECK SIZE OF THE DIFFUSER, REGISTER OR GRILLE IT SERVES UNLESS NOTED OTHERWISE, TYPICAL.
- 4. COORDINATION DRAWING SUBMITTALS ARE REQUIRED FOR THIS
- 5. SEE ARCHITECTURAL PLANS FOR EXACT LOCATION OF ALL REGISTERS, DIFFUSERS AND GRILLES.
- 6. INSTALL ALL HARD ELBOWS AS SHOWN ON EXPOSED DUCT. HARD ELBOWS ARE REQUIRED FOR SOUND ATTENUATION.
- 7. INSTALL EQUIPMENT WITH CLEARANCE PER MANUFACTURERS RECOMMENDATIONS. MAINTAIN PROPER SPACE FOR COIL PULL, CONTROLS, AND MAINTENANCE ACCESS.
- 8. ALL BRANCH TAKE-OFFS TO HAVE A HIGH EFFICIENCY FITTING. SEE
- 9. INSTALL TURNING VANES IN ALL SQUARE LOW PRESSURE DUCTWORK. 10. DETAILS REFERENCE ALL SHEETS.
- 11. UNLESS OTHERWISE NOTED, ALL SUPPLY DIFFUSERS SHALL BE OF THE CD-1 TYPE, AND ALL RETURN GRILLES SHALL BE OF THE RG-1

#### PLUMBING GENERAL NOTES

- 1. SLEEVE PIPING THRU WALLS/FOUNDATIONS WHERE REQUIRED.
- 2. PLUMBING DRAWINGS ARE SCHEMATIC IN NATURE. FIELD VERIFY EXACT ROUTING & COORDINATE WITH ALL OTHER TRADES.
- 3. ALL PIPING IN PLUMBING CHASES TO BE ARRANGED TO ALLOW
- MAINTENANCE ACCESS.
- 4. NO PIPING TO RUN OVER ELECTRICAL PANELS, VFD'S, OR MCC'S.
- 5. NO FIRE PROTECTION LINE IS TO BE DESIGNED OR INSTALLED PRIOR TO CLOSE COORDINATION WITH ALL OTHER DISCIPLINES, DUCTWORK, MECHANICAL PIPING, AND PLUMBING TAKE SPACE PRECEDENCE OVER FIRE PROTECTION PIPING. FAILURE TO COMPLY WILL RESULT IN FIRE PROTECTION REMOVAL AND REINSTALLATION AT THE FIRE PROTECTION CONTRACTORS EXPENSE.
- 6. SLEEVE/CONFIGURE CMU WALLS FOR EMBEDDED PIPING AND PIPE PENETRATIONS AS REQUIRED.
- 7. REFER TO ARCHITECTURAL DRAWINGS FOR FIXTURE MOUNTING HEIGHTS, DIMENSIONS, AND OTHER REQUIREMENTS.
- 8. INSTALL A 24" X 24" ACCESS DOOR BELOW ALL ISOLATION VALVES & CIRCUIT SETTERS WHERE MOUNTED ABOVE HARD CEILINGS.
- 9. MOUNT ALL CEILING TYPE ISOLATION VALVES, CONTROL VALVES, CIRCUIT SETTERS, ETC. NEAR CEILING HEIGHT FOR ACCESSIBILITY.
- 10. DETAILS REFERENCE ALL SHEETS.







# (1) - ----

0721

00

Axis Job # 02-16-2009 Drawn

Checked MECHANICAL SYMBOLS

AND ABBREVIATIONS

	PACKAGED ROOFTOP UNIT SCHEDULE														
	SUPPLY FAN HEATING SECTION COOLING SECTION ELECT						ELECTRICAL								
				EXTERNAL		ENTERING/			ENTERING	LEAVING			SUPPLY		
	MANUFACTURER		AIRFLOW	STATIC	HEATING	LEAVING		COOLING	AIR TEMP.	AIR TEMP.			FAN	SINGLE	
	AND		RATE	PRESSURE	LOAD	AIR TEMP.		LOAD	DB/WB	DB/WB		TOTAL	MOTOR	POINT	
ID	MODEL NUMBER	LOCATION	(CFM)	(IN. WATER)	(BTU/H)	(°F)	MEDIUM	(BTU/H)	(°F)	(°F)	MEDIUM	MCA	(HP)	VOLT/PH/HZ	NOTES
RTU-1	YORK ZJ060D06N2AAA1	ROOF	2000	0.6	60,000	70/98	NAT. GAS	49,420	80/62	55/52	R-410A	29.5	1.5	208/3/60	1, 2

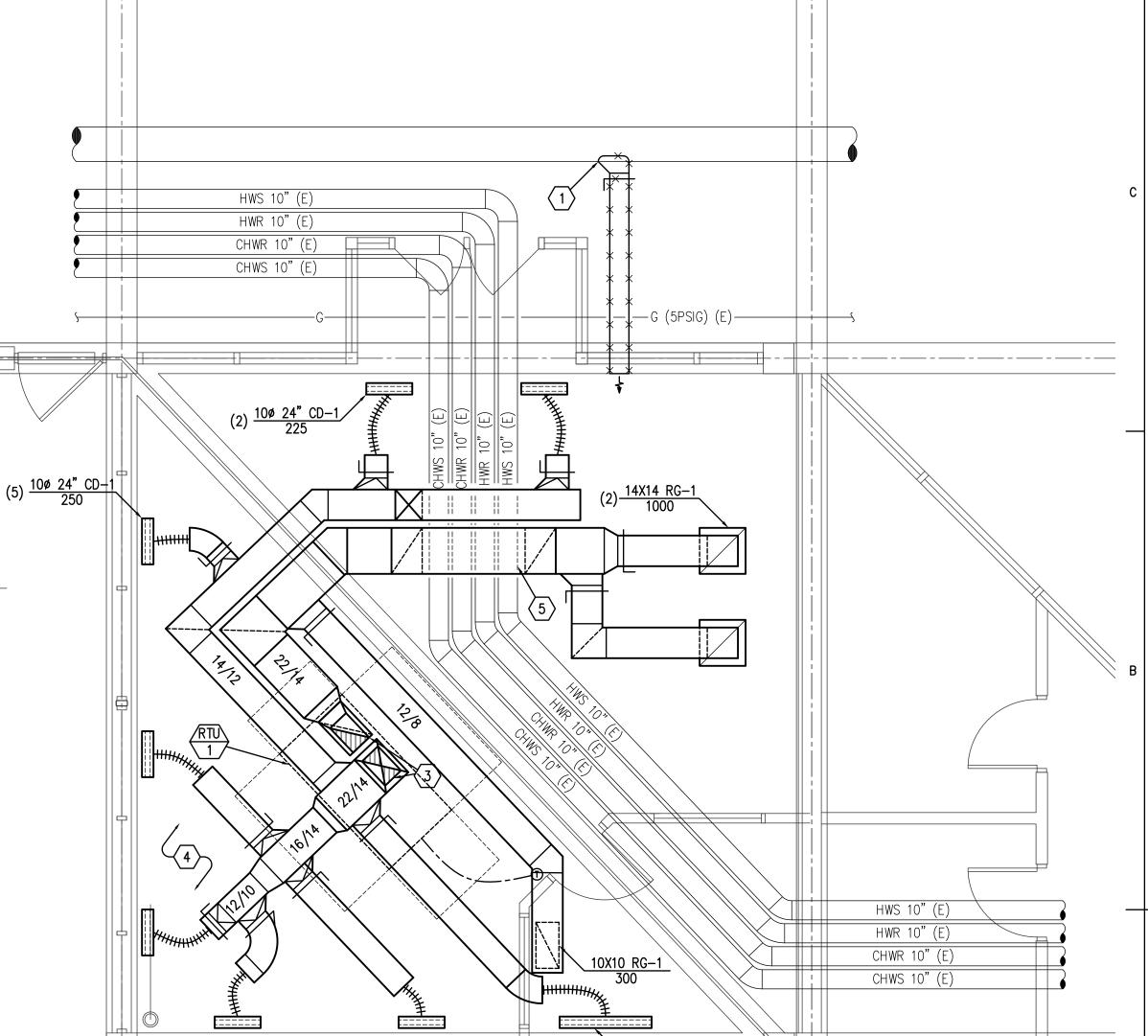
1. AIRFLOW AT DESIGN ELEVATION OF 4,200'.

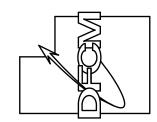
2. GAS HEATING CAPACITY AT DESIGN ELEVATION OF 4,200'.

	GRILLES, REGISTERS AND DIFFUSERS						
ID	MANUFACTURER	MODEL	MAX NC	DESCRIPTION			
CD-1	EH PRICE	AS 210	30	2 SLOT LINEAR CEILING DIFFUSER WITH FULLY ADJUSTABLE AIR PATTERN AND FLOW CONTROL VANES FOR ONE OR TWO WAY THROW PATTERN. UNITS SHALL HAVE TWO 1" SLOTS AND FACTORY INSULATED PLENUM WITH ROUND DUCT CONNECTION. FOR SURFACE OR LAY-IN MOUNTING AS REQUIRED. UNIT SHALL BE CURVED FACE FOR EXPOSED DUCT MOUNTING AS REQUIED.			
RG-1	EH PRICE	PDDR	30	PERFORATED FACE RETURN AIR UNIT, REMOVABLE FACE & CORE. FRAME SHALL BE FOR SURFACE OR LAY-IN MOUNTING AS REQUIRED BY CEILING TYPE. LAY-IN FRAMES SHALL BE 24" x 24", 24" x 12" OR 12" x 12" AS REQUIRED TO FIT CEILING TILE SPACE AVAILABLE. AIR QUANTITY SHALL MATCH ROOM SUPPLY OR EXHAUST AIR QUANTITY.			

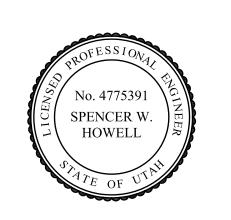
# # KEYED NOTES

- 1. DEMOLISH AND CAP EXISTING DUCT AS SHOWN.
- 2. NOT USED.
- SHEET METAL SUPPLY DUCT UP TO ROOFTOP UNIT, PROVIDE SHEET METAL TRANSITION TO MATCH UNIT OPENING.
- 4. COORDINATE FINAL LOCATION OF CEILING DIFFUSERS, REGISTERS, AND GRILLES WITH ARCHITECTURAL REFLECTED CEILING PLAN.
- ROUTE NEW RETURN OVER EXISTING BUILDING PIPING MAINS.









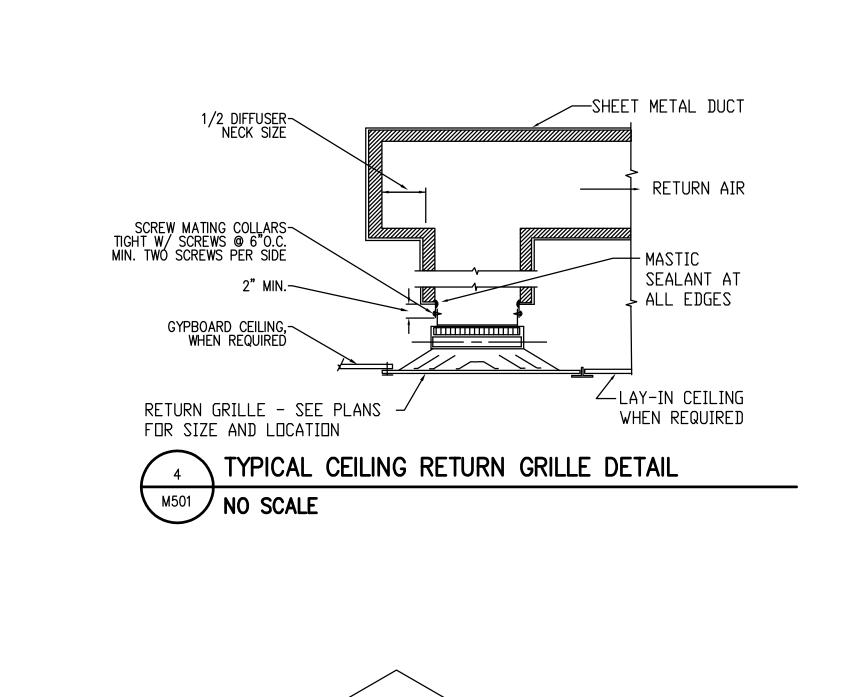
Valley Universit Union

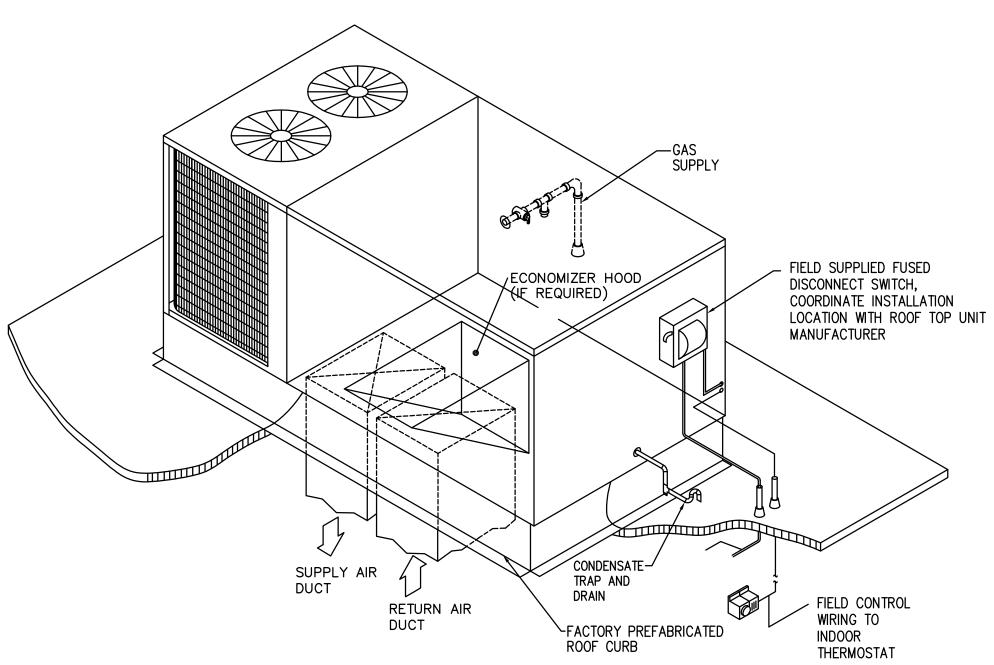
Axis Job # 0721 Owner #

ner #
te 02-16-2009
awn JL
ecked SH

MECHANICAL PLAN

M101

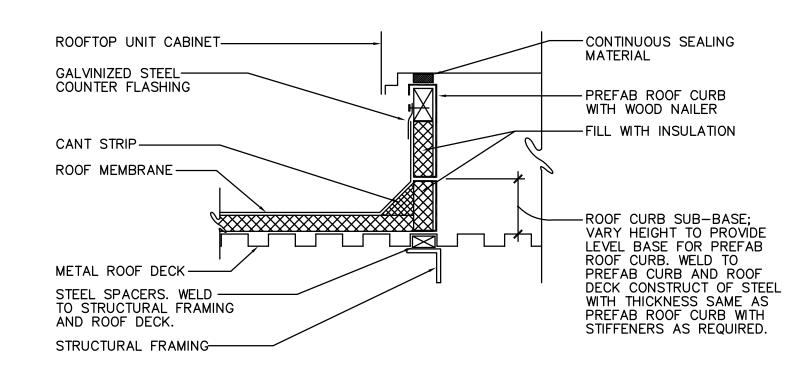


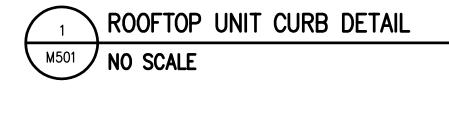


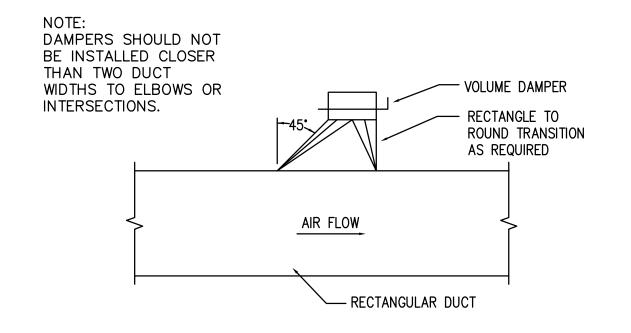
ROOFTOP PACKAGED HVAC UNIT DETAIL

NO SCALE

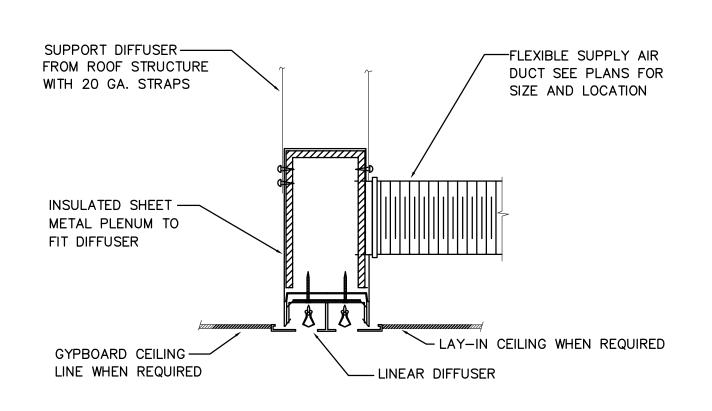
NOTE: ANCHOR ROOFTOP UNIT TO PREFAB ROOF CURB PER SEISMIC RESTRAINT REQUIREMENTS.



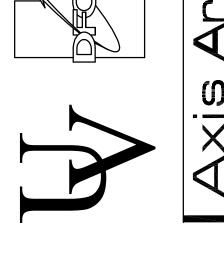


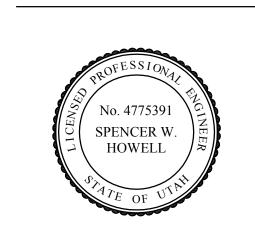












tah Valley University redit Union

OREM, UTAH

Axis Job # 0721
Owner #
Date 02-16-2009
Drawn JL

Checked SH

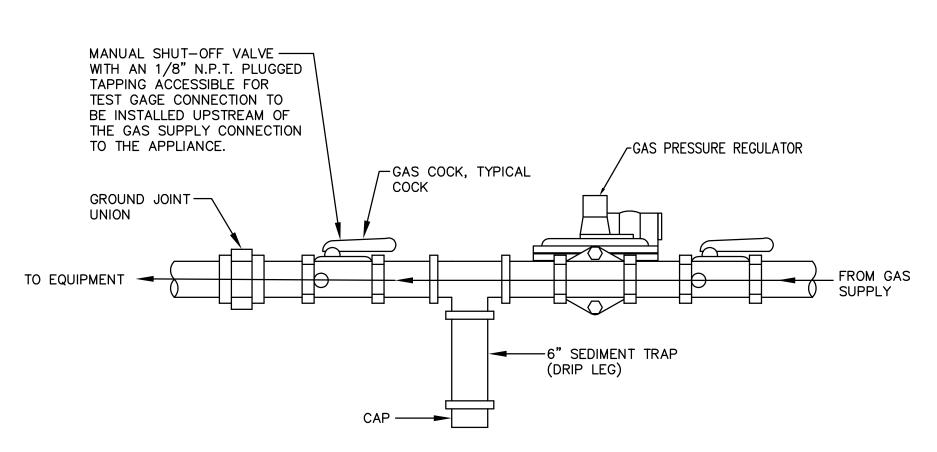
MECHANICAL DETAILS

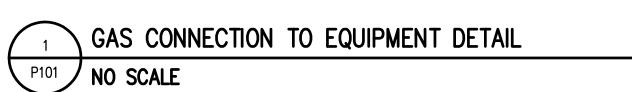
M501

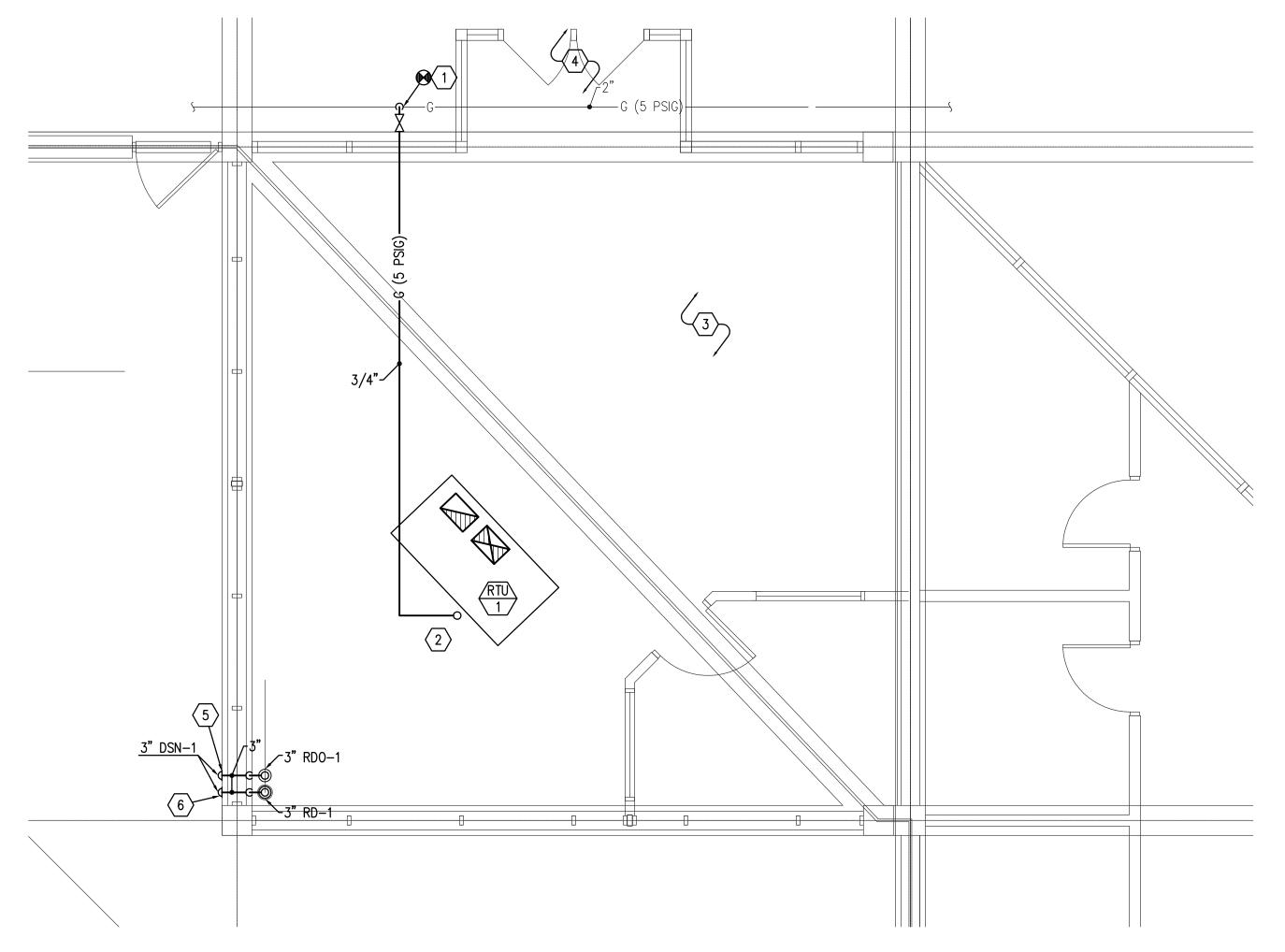
# # KEYED NOTES

- 1. INSTALL MANUAL GAS SHUT-OFF VALVE IN NEW 3/4"
  GAS PIPE AT POINT OF CONNECTION TO EXISTING GAS
- INSTALL 5 PSIG TO 4 OZ. GAS PRESSURE REGULATOR ON ROOF FOR 87 CFH CONNECTED LOAD.
- PROVIDE NEW FIRE SPRINKLER COVERAGE IN THE ADDITION. CONNECT TO THE NEAREST MAIN. CONTRACTOR TO FIELD VERIFY EXISTING SYSTEM.
- 4. PROVIDE A CONCEALED HEAD IN THE ENTRY VESTIBULE.
- OVERFLOW DOWNSPOUT NOZZLE TO BE MOUNTED 11'-9" ABOVE FINISHED FLOOR ELEVATION.
- 6. MOUNT ROOF DRAIN DOWNSPOUT NOZZLE AT 6" ABOVE FINISHED FLOOR ELEVATION.

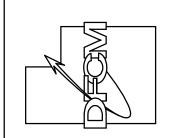
PLUMBING FIXTURE SCHEDULE									
ID	FIXTURE	NOTES							
DSN-1	DOWN SPOUT NOZZLE	SEE PLANS FOR SIZE							
RD-1	ROOF DRAIN	SEE PLANS FOR SIZE							
RDO-1	ROOF DRAIN OVERFLOW	SEE PLANS FOR SIZE							

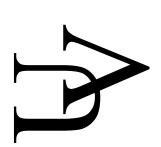














# niversity

Credit Union
OREM, UTAH

Axis Job # 0721

PLUMBING PLAN

P101

# GENERAL NOTES

- CONSULT ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATION OF ALL LIGHTING FIXTURES.
- 2. VERIFY ALL EQUIPMENT DIMENSIONS AND LOCATIONS BEFORE BEGINNING ROUGH IN. CONSULT ALL APPLICABLE CONTRACT DRAWINGS AND SHOP DRAWINGS TO INSURE NEC CODE CLEARANCES REQUIRED AROUND ALL
- 3. CONTRACTOR SHALL VERIFY ALL ELECTRICAL LOADS (VOLTAGE, PHASE, CONNECTION REQUIREMENTS, ETC.) OF EQUIPMENT FURNISHED UNDER DIVISION 15 WITH APPROVED MECHANICAL SHOP DRAWINGS BEFORE
- 4. SEE SECTION 16510 OF THE SPECIFICATION REQUIRED COORDINATION
- 5. SEE APPLICABLE SHOP DRAWINGS FOR ROUGH IN LOCATION OF ALL EQUIPMENT, WIRING DEVICES, ETC. WHERE APPLICABLE MOUNT ALL WIRING DEVICES ABOVE BACK SPLASH EXCEPT THOSE SERVING UNDER COUNTER
- 6. SEE SPECIFICATION FOR ENERGY SAVING LAMP AND BALLAST REQUIREMENTS.
- 7. FINISHES OF ALL LIGHT FIXTURES SHALL BE AS SELECTED BY ARCHITECT.
- PERMITTED TO BE INSTALLED IN, ENTER OR PASS THRU ELECTRICAL ROOMS OR SPACES, OR ABOVE OR BELOW ELECTRICAL EQUIPMENT IN OTHER
- 9. ELECTRICAL BOXES SHALL NOT BE LOCATED IN MASONRY COLUMNS IN
- 10. ALL PENETRATIONS OF FIRE RATED FLOORS, WALLS, AND CEILINGS SHALL BE SEALED WITH APPROVED MATERIAL TO MAINTAIN FIRE RATING OF
- 11. CIRCUITS EXTENDING OVER 70' FOR 120 VOLT AND 165' FOR 277 VOLT 20 AMP CIRCUITS SHALL BE RUN WITH MINIMUM #10 CONDUCTORS.

# DEMOLITION NOTES

- COORDINATE ALL NEW ELECTRICAL EQUIPMENT REQUIREMENTS AND MAKE CONNECTION TO EXISTING SYSTEMS. THIS INCLUDES LIGHTING, POWER,
- 2. RELOCATE, REWIRE AND/OR RECONNECT EXISTING ELECTRICAL DEVICES
- 3. CONCEAL ALL RACEWAY AND WIRING IN EXISTING WALLS, CEILINGS, FLOORS, ETC. EXCEPT WHERE THE USE OF SURFACE METAL RACEWAYS (E.G. WIRE
- 4. LEAVE ALL EXISTING EQUIPMENT, IN PORTIONS OF THE BUILDING NOT BEING REMODELED, IN WORKING CONDITION. RESTORE ALL INTERRUPTED BRANCH CIRCUITS, FEEDERS, ETC. TO WORKING CONDITION.
- 5. EXISTING RACEWAYS MAY BE REUSED (IN PLACE) WHERE POSSIBLE, AND WHERE IN COMPLIANCE WITH THE SPECIFICATIONS AND THE INTENT OF THE CONTRACT DOCUMENTS. INSURE INTEGRITY OF EXISTING RACEWAY BEFORE
- THAT ARE NOT TO BE REUSED.
- REMOVE EXISTING LIGHT FIXTURES WHICH ARE NOT TO BE REUSED, PLACE DISPOSE OF FIXTURES THAT THE OWNER CHOOSES NOT TO KEEP.
- 8. DO NOT PENETRATE STRUCTURAL ELEMENTS OF FLOORS, WALLS, CEILINGS,
- 9. DISCONNECT AND RECONNECT ANY/ALL FIXTURES, DEVICES, EQUIPMENT, ETC. REQUIRED FOR PROPER COMPLETION OF THE WORK.

#### FIXTURE SCHEDULE DESCRIPTION **CATALOG NUMBER** VOLTS LAMPS (2) F32 T8 835 PER EGAM2 232 XFT 120 EB .71 BF, SCT L/LP F 18 C100 AGC DV SPX 35K LAMPS (2) F32 T8 835 PER EGAM2 232 8FT 120 EB .71 BF, SCT L/LP F 18 C100 AGC DV RECESSED FLUORESCENT DOWNLIGHT

LIGHT FIXTURE ABBREVIATION SCHEDULE			LIGHT FIXTURE GENERAL NOTES						
NOTE: NOT ALL ABBREVIATIONS WILL NECESSARILY BE USED.				REFER TO THE ARCHITECTURAL REFLECTED CEILING PLANS FOR LOCATIONS OF LIGHT FIX					
I	A.F.F.	ABOVE FINISH FLOOR	'''	BRING ALL DISCREPANCIES OF LOCATIONS AND QUANTITIES TO THE ATTENTION OF THE ARCHITECT AND ELECTRICAL ENGINEER PRIOR TO BIDDING.					
I	WALL@CLG	WALL MOUNT AT CORNER OF WALL AND CEILING	$\parallel$	DEEED TO ADOLUTEOTUDAL ELEVATIONS FOR MOUNTING LIFECUTS AND LOCATIONS OF LIGH					
I	CCBA	CUSTOM PAINTED COLOR AS SELECTED BY THE ARCHITECT		REFER TO ARCHITECTURAL ELEVATIONS FOR MOUNTING HEIGHTS AND LOCATIONS OF LIGH FIXTURES. BRING ALL DISCREPANCIES TO THE ATTENTION OF THE ARCHITECT PRIOR TO I					
ı	SCBA	STANDARD PAINTED COLOR AS SELECTED BY THE ARCHITECT	3	REFER TO THE SPECIFICATIONS FOR OTHER LIGHT FIXTURE FUSING BALLAST AND LAMP					

- STANDARD PAINTED COLOR AS SELECTED BY THE ARCHITECT | , REFER TO THE SPECIFICATIONS FOR OTHER LIGHT FIXTURE, FUSING, BALLAST, AND LAMP REQUIREMENTS AND ACCEPTABLE MANUFACTURERS. CUSTOM FINISH AS SELECTED BY THE ARCHITECT
  - CONFIRM AVAILABLE MOUNTING DEPTHS OF ALL LIGHT FIXTURES AND COMPARE WITH DEPTHS SHOWN ON SHOP DRAWINGS. BRING ALL POTENTIAL CONFLICT AREAS TO THE ATTENTION OF

. BID ONLY PRODUCTS THAT ARE SPECIFIED OR APPROVED BY ADDENDUM.

STANDARD FINISH AS SELECTED BY THE ARCHITECT

MODIFY STANDARD LIGHT FIXTURE AS INDICATED

- . PACKAGING OF LIGHT FIXTURES WITH OTHER SYSTEMS IS <u>NOT</u> ALLOWED.
- DISTRIBUTORS AND/OR CONTRACTORS.
- WHEN A CONTRADICTION EXISTS BETWEEN A SPECIFIC MODEL NUMBER AND THE DESCRIPTION, THE DESCRIPTION SHALL GOVERN.

#### PRIOR APPROVAL REQUIREMENTS

- 2. PRIOR APPROVALS SHALL BE SUBMITTED TO THE ELECTRICAL ENGINEER'S OFFICE AT LEAST (8) EIGHT WORKING DAYS BEFORE THE BID. PRIOR APPROVALS RECEIVED AFTER THIS TIME PERIOD SHALL BE REJECTED.
- PRIOR APPROVALS SHALL BE SIGNED BY A PRINCIPAL OF THE SUBMITTING ORGANIZATION STATING THAT THEY HAVE PREPARED AND/OR REVIEWED THE SUBMITTAL AND THAT
- 5. IT IS NOT THE RESPONSIBILITY OF THE ELECTRICAL ENGINEER TO NOTIFY THE SUBMITTING PARTY OF ERRORS IN THE SUBMITTAL. NOTIFICATION OF ERRORS BY THE
- SPECIFICATION INFORMATION SHALL BE CLEARLY MARKED, WITH NON-APPLICABLE INFORMATION CROSSED OUT. COMPLETE PHOTOMETRIC DATA SHALL BE PROVIDED.
- 8. SAMPLE FIXTURES MUST BE SUPPLIED WITH A CORD, PLUG AND 120V BALLAST.

#### LIGHTING SHOP DRAWING REQUIREMENTS

- . REFER TO SPECIFICATIONS 16001, 16510 & 16551.
- 3. LINEAR LIGHTING MUST INCLUDE DETAILED DRAWINGS WITH SUPPORT DETAILS, STEM LOCATIONS AND HAVE ALL LENGTHS IDENTIFIED WITH STEM LOCATIONS.
- 4. COLOR SAMPLES MUST BE INCLUDED IN FIRST SUBMITTAL.
- 5. CUT SHEETS MUST BE STAMPED WITH THE FACTORY REPRESENTATIVE'S COMPANY NAME.
- 6. VALUE ENGINEERING CONDUCTED WITHOUT THE DESIGN TEAM IE; ARCHITECT, OWNER, ENGINEER & LIGHTING CONSULTANT/DESIGNER WILL NOT BE ALLOWED, REVIEWED OR

# **EQUIPMENT SCHEDULE**

								WIRES		OCPD		REF. NOTES				
UNIT#	FUNCTION	LOAD	VOLT	PHASE	FULL LOAD AMPS	CONDUIT	NO. SETS	NO.	ЗZIS	EQUIP. GND (1)	ЭЈЛ	AMPS	STARTER	DISCONNECT	OTHER	REMARKS
RTU-1	ROOFTOP UNIT	33.5 MCA	208	3	26.80	3/4"	1	3	8	10	СВ	45		2B		

1. NON-FUSED DISCONNECT SWITCH 2. FUSED DISCONNECT SWITCH 3. BREAKER IN ENCLOSURE 4. MANUAL STARTER W/THERMAL OVERLOAD 5. MAGNETIC STARTER 6. MAGNETIC STARTER/NON-FUSED DISCONNECT COMBINATIO MAGNETIC STARTER/FUSED DISCONNECT COMBINATION 8. MAGNETIC STARTER/BREAKER COMBINATION 9. VARIABLE FREQUENCY DRIVE 10. REDUCED VOLTAGE STARTER 11. DIRECT CONNECTION 2. RECEPTACLE/SPECIAL PURPOSE OUTLET/ETC.

13. TWO-SPEED STARTER, COORDINATE W/MOTOR TYPE

A. FURNISHED, INSTALLED, AND CONNECTED UNDER DIVISION 16 B. FURNISHED AND INSTALLED UNDER ANOTHER DIVISION REQUIRING **CONNECTION UNDER DIVISION 16.** C. FURNISHED UNDER ANOTHER DIVISION BUT INSTALLED AND

D. FURNISHED, INSTALLED AND CONNECTED UNDER ANOTHER DIVISIO

CKW = CHILLER KILOWATTS

CB = CIRCUIT BREAKER - THERMAL MAGNETIC

NOTE 1: PER 250.122(A), EQUIPMENT GROUND IS NOT REQUIRED TO BE LARGER THAN PHASE CONDUCTOR.

# ELECTRICAL SYMBOL SCHEDULE

SEE FIXTURE SCHEDULE FOR TYPE, MOUNTING AND WATTAGE.
HEIGHT MEASURED TO CENTER LINE OF THE BOX FROM THE FINISH FLOOR.
REFER TO DRAWINGS FOR DIRECTIONAL ARROWS. SUBSCRIPT KEYS SWITCH TO FIXTURES CONTROLLED.

NEMA TYPE 'ND' NON-FUSED UNLESS NOTED 'F' (FUSED). USE 'HD' 480 V.

HEIGHT TO BE THE LOWER OF EITHER 80" A.F.F. OR 6" BELOW CEILING.

STANDARD MOUNTING HEIGHT UNLESS OTHERWISE NOTED ON PLANS

PROVIDE H.O.A. AND S.S. PUSHBUTTONS AS REQUIRED.

10. SUBSCRIPT DENOTES NEMA CONFIGURATION.

STANDARD MOUNTING HEIGHT UNLESS OTHERWISE NOTED ON PLANS

DOUBLE ARROWS DENOTE A DOUBLE FACE UNIT. COORDINATE WITH MILLWORK SHOP DRAWINGS AND ELEVATIONS FOR HEIGHT. 11. HEIGHT MEASURED TO BOTTOM OF THE BOX FROM FINISH FLOOR. \* TYPICAL SYMBOL SCHEDULE. SOME SYMBOLS MAY NOT BE USED IN THIS SET OF DRAWINGS.

SYMBOL	DESCRIPTION	MOUNTING HEIGHT	NOTES	SYMBOL	DESCRIPTION	MOUNTING HEIGHT	NOTES
_	ONE CIRCUIT, TWO WIRE HOME RUN TO PANEL			<b>U</b>	JUNCTION BOX ('F' IN FLOOR)	AS NOTED	
	2 CIRCUIT, 3 WIRE, COMMON NEUTRAL HOME RUN			/0/	MOTOR OUTLET	TO SUIT EQUIP.	
	3 CIRCUIT, 4 WIRE, COMMON NEUTRAL HOME RUN			P	PHOTO-ELECTRIC CONTROL	AS NOTED	TORK 2000A
	CONDUIT RUN CONCEALED IN WALL OR CEILING			TC	TIME CLOCK	+5'-0"	2.
	CONDUIT RUN CONCEALED IN FLOOR OR GROUND			•	PUSHBUTTON	+4'-0"	2.
	CONDUIT UP				NON-FUSED DISCONNECT SWITCH	+5'-0"	5.
	CONDUIT DOWN			F	FUSED DISCONNECT SWITCH	+5'-0"	5.
$\dashv$	CONDUIT STUB LOCATION	CAP CONDUIT		\$ <sup>T</sup>	MANUAL STARTER THERMAL OVERLOAD SWITCH WITH PILOT LIGHT	+4'-0"	2.
	CABLE TRAY	AS NOTED			MAGNETIC STARTER	+5'-0"	7.
0	CEILING LIGHT FIXTURE	CEILING	1.		MAGNETIC STARTER / DISCONNECT COMBINATION	+5'-0"	
Ю	WALL LIGHT FIXTURE	AS NOTED	1.	VFD	VARIABLE FREQUENCY DRIVE	+6'-6"	
	RECESSED DOWNLIGHT FIXTURE	CEILING	1.		PANEL BOARD	TOP AT +6'-0"	
	FLUORESCENT LIGHT FIXTURE	AS NOTED	1	7////	MAIN DISTRIBUTION PANEL	+0 -0	
	FLUORESCENT EGRESS LIGHT FIXTURE	AS NOTED	UNSWITCHED		TELEPHONE TERMINAL BOARD		
<b>⊕-</b>	AREA LIGHT POLE AND FIXTURE	CONCRETE BASE	SEE DIAGRAM		BELL	+7'-6"	
$\overline{\bigcirc}$	FLOOD OR TRACK FIXTURE	AS NOTED			CHIME	+7'-6"	
$\otimes$	CEILING MOUNTED EXIT LIGHT	CEILING	1.3.8.	F	FIRE ALARM MANUAL STATION	+4'-0"	2.
₩	WALL MOUNTED EXIT LIGHT	AS NOTED	1.3.8.		FIRE ALARM SIGNAL HORN/STROBE PROJECTORS	+6'-8"	6.
\$	SINGLE POLE SWITCH	+4'-0"	2.	H	FIRE ALARM SIGNAL HORN/STROBE	+6'-8"	6.
\$°	SINGLE POLE SWITCH	+4'-0"	4. 2.	E	FIRE ALARM SIGNAL SPEAKER/STROBE	+6'-8"	6.
\$ <sup>3</sup>	THREE-WAY SWITCH	+4'-0"	2.	<b>©</b> s	SMOKE DETECTOR	CEILING	<u>.                                    </u>
\$ <sup>4</sup>	FOUR-WAY SWITCH	+4'-0"	2.	<b>⊚</b> s <b>⊚</b> D	DUCT SMOKE DETECTOR	32.2	MTD. IN DUCT
\$ <sup>K</sup>	KEY OPERATED SWITCH	+4'-0"	2.	<u>⊚</u> в	HEAT DETECTOR	CEILING	W15. IIV 5001
<u> </u>		+4'-0"		<u> </u>		CEILING	
\$P &D	SWITCH WITH PILOT LIGHT	+4'-0"	2.		FIRE/SMOKE DAMPER	AC NOTED	
\$ <sup>D</sup>	VARIABLE INTENSITY SWITCH		2.		DOOR HOLDER	AS NOTED	
\$ <sup>TM</sup>	TIMER SWITCH	+4'-0"	2.	Fs	FLOW SWITCH		
\$	MOMENTARY CONTACT SWITCH, CENTER POSITION OFF	+4'-0"	2.	Ts	TAMPER SWITCH		
	OCCUPANCY SENSOR	CEILING		W <sub>F</sub>	WATER FLOOD INDICATOR		
<u>Ю</u>	OCCUPANCY SENSOR	+4'-0"	2.	<u>&amp;</u>	O.S. & Y. VALVE		SEE DIAGRAM
<u> </u>	POWER PACK		SEE DIAGRAM, SPEC.	R	FIRE ALARM RELAY		
	AUTOMATIC RELAY PACK	CEILING	SEE DIAGRAM. SPEC.	СМ	FIRE ALARM CONTROL MODULE		
	LOW VOLTAGE TRANSFORMER	14C" OD		MM	FIRE ALARM MONITOR MODULE		
<del>-</del>	DUPLEX RECEPTACLE UPPER OUTLET SWITCH CONTROLLED	+16" OR AS NOTED	9. 11.	S	FIRE ALARM STROBE	+6'-8"	6.
0	SIMPLEX RECEPTACLE	+16" OR AS NOTED	9. 11.	● <sub>D</sub>	DURESS PUSHBUTTON	+4'-0"	
<del></del>	DUPLEX RECEPTACLE	+16" OR AS NOTED	9. 11.	<b>⊕</b> 1	SECURITY SYSTEM DOOR SWITCH	DOOR JAMB	
⊕_A	DUPLEX RECEPTACLE		9.	<b>⊕</b> 2	SECURITY SYSTEM OVERHEAD DOOR SWITCH	CEILING	MOUNT AS PER. MAN
₩	ELECTRIC WATER COOLER RECEPTACLE	. 0 4 7 0 0	SEE DIAGRAM	MI)	MAGNETIC SHEAR LOCK		
₩P	WEATHERPROOF RECEPTACLE	+24" OR AS NOTED	2. 9.	<u>♦</u>	SECURITY SYSTEM KEYED ACCESS SWITCH	+4'-0"	2.
Û <sub>P</sub>	POWER JUNCTION BOX	+16" OR AS NOTED	9. 11.	$\Diamond$	INFRARED SENSOR	AS NOTED	
<b>3</b>	GROUND FAULT INTERRUPTER DUPLEX RECEPTACLE	+16" OR AS NOTED	9. 11.	<b>₩</b>	SECURITY MOTION DETECTOR		MOUNT AS PER. MAN
<del>-</del>	DUPLEX RECEPTACLE EMERGENCY POWER (RED)	+16" OR AS NOTED	9. 11.	<u>©</u>	GLASS BREAK DETECTOR	CEILING	
#	FOURPLEX RECEPTACLE	+16" OR AS NOTED	9. 11.	<b>(ES)</b>	ELECTRIC DOOR STRIKE		
#	FOURPLEX RECEPTACLE EMERGENCY POWER (RED)	+16" OR AS NOTED	9. 11.	CR	ACCESS CONTROL CARD READER	+4'-0"	2.
<u>•</u>	FLOOR OUTLET WITH 20A DEVICE	FLOOR			CLOSED CIRCUIT TELEVISION CAMERA	AS NOTED	
<u> </u>	MULTIPLE SERVICE FLOOR BOX	FLOOR		•	DOOR POSITION INDICATING SWITCH	+8'-0" OR	
	SPECIAL PURPOSE OUTLET	+16" OR AS NOTED	10. WITH CAP. 11.	#	SOUND SYSTEM SPEAKER	AS NOTED	
<u>+</u>	CORD DROP	+46" OR	SEE DIAGRAM	● IC	INTERCOM SPEAKER	AS NOTED	
	PLUGMOLD	AS NOTED		<b>9</b> <sub>V</sub>	VOLUME CONTROL		2.
	TELEVISION OUTLET	+16" OR AS NOTED	11.	● м	MICROPHONE OUTLET	+16"	11.
<u> </u>	DATA OUTLET JUNCTION BOX	+16" OR AS NOTED	9. 11.	M	MICROPHONE FLOOR OUTLET	FLOOR	
$\triangleright$	TELEPHONE OUTLET	+16" OR AS NOTED +16" OR	9. 11.	M	MICROPHONE CEILING OUTLET	CEILING	
	TELEPHONE/DATA OUTLET	AS NOTED	9. 11.		SOUND EQUIPMENT CABINET		CIRCUIT TO 120V
	TELEPHONE OUTLET	FLOOR		842	ARCHITECTURAL ROOM NUMBER		
<b>X</b>	CALL SWITCH	+4'-0"	2.	(A)	LIGHT FIXTURE (LETTER DESIGNATES TYPE)		
Ю	CLOCK OUTLET	+7'-6"	8.	EQ 34	EQUIPMENT NUMBER		
	CLOCK/SPEAKER COMBINATION	+7'-6"					

# INDEX OF ELECTRICAL DRAWINGS

EG001 SYMBOLS, SCHEDULES AND NOTES

EL201 LIGHTING PLAN

EP301 POWER PLAN

EX401 ELECTRICAL DIAGRAMS

B. ELAINE FAWSON No. 295587

# 

Revision # Date

Axis Job # 0721 BNA Job # 09007A Owner

02-16-2009 BNA EF Drawn Checked

SYMBOLS, SCHEDULES

AND NOTES

ELECTRICAL EQUIPMENT.

MEETINGS WITH MECHANICAL AND CEILING CONTRACTORS.

8. THE ELECTRICAL CONTRACTOR SHALL NOTIFY AND COOPERATE WITH THE MECHANICAL CONTRACTOR SUCH THAT NO PIPING, DUCTS, OR EQUIPMENT FOREIGN TO THE OPERATION OF THE ELECTRICAL EQUIPMENT SHALL BE

BRICK WALLS OR IN GROUTED CELLS ADJACENT TO OPENINGS. COORDINATE LOCATION OF BOXES WITH MASONRY CONTRACTOR.

TYPE

CFBA

SFBA

MOD

SIGNAL, RACEWAY AND OTHER SYSTEMS INCLUDED UNDER DIVISION 16

AND/OR EQUIPMENT THAT FOR ANY REASON OBSTRUCTS CONSTRUCTION.

MOLD) IS INDICATED ON DRAWINGS OR IN SPEC.

6. REMOVE ALL RACEWAYS, CONDUCTORS, BOXES, DEVICES, EQUIPMENT, ETC.

IN CARTON, LABEL APPROPRIATELY, AND RETURN TO OWNER, OR PROPERLY

LINEAR INDIRECT, 18" AIRCRAFT CABLE SUSPENSION ROW LENGTH AS SHOWN ON THE DRAWINGS LINEAR INDIRECT, 18" AIRCRAFT CABLE SUSPENSION

(1) 42WTT 35K AF 1 42 TRT 6AR LD 120

LICHT FIVTURE

FIXTURES.

**BIDDING** 

REFER TO ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR LOUVER REQUIREMENTS AS

THE ARCHITECT AND ELECTRICAL ENGINEER PRIOR TO RELEASE.

**BIDDING REQUIREMENTS** 

3. WHEN ONLY ONE PRODUCT IS APPROVED FOR BIDDING, THE PRICE FOR THAT ITEM SHALL BE BROKEN OUT SEPARATELY WHEN SUBMITTING PRICING TO VARIOUS

1. PRIOR APPROVAL IS REQUIRED BEFORE BIDDING THIS PROJECT.

THE PRODUCTS PROPOSED ARE EQUIVALENT TO THOSE SPECIFIED. ANY EXCEPTIONS SHALL BE SO NOTED.

I. ITEMS THAT ARE SUBMITTED AND HAVE BEEN APPROVED WILL BE LISTED IN THE ADDENDUM(S). VERBAL APPROVAL WILL <u>NOT BE</u> GIVEN ON ANY ITEM.

ELECTRICAL ENGINEER PRIOR TO ISSUANCE OF THE ADDENDUM(S) MAY NOT BE GIVEN. PRIOR APPROVALS SHALL CONSIST OF TWO SETS OF CUT SHEETS DESCRIBING THE PRODUCTS BEING SUBMITTED AS EQUIVALENTS. FAXES ARE NOT ACCEPTABLE. ALL

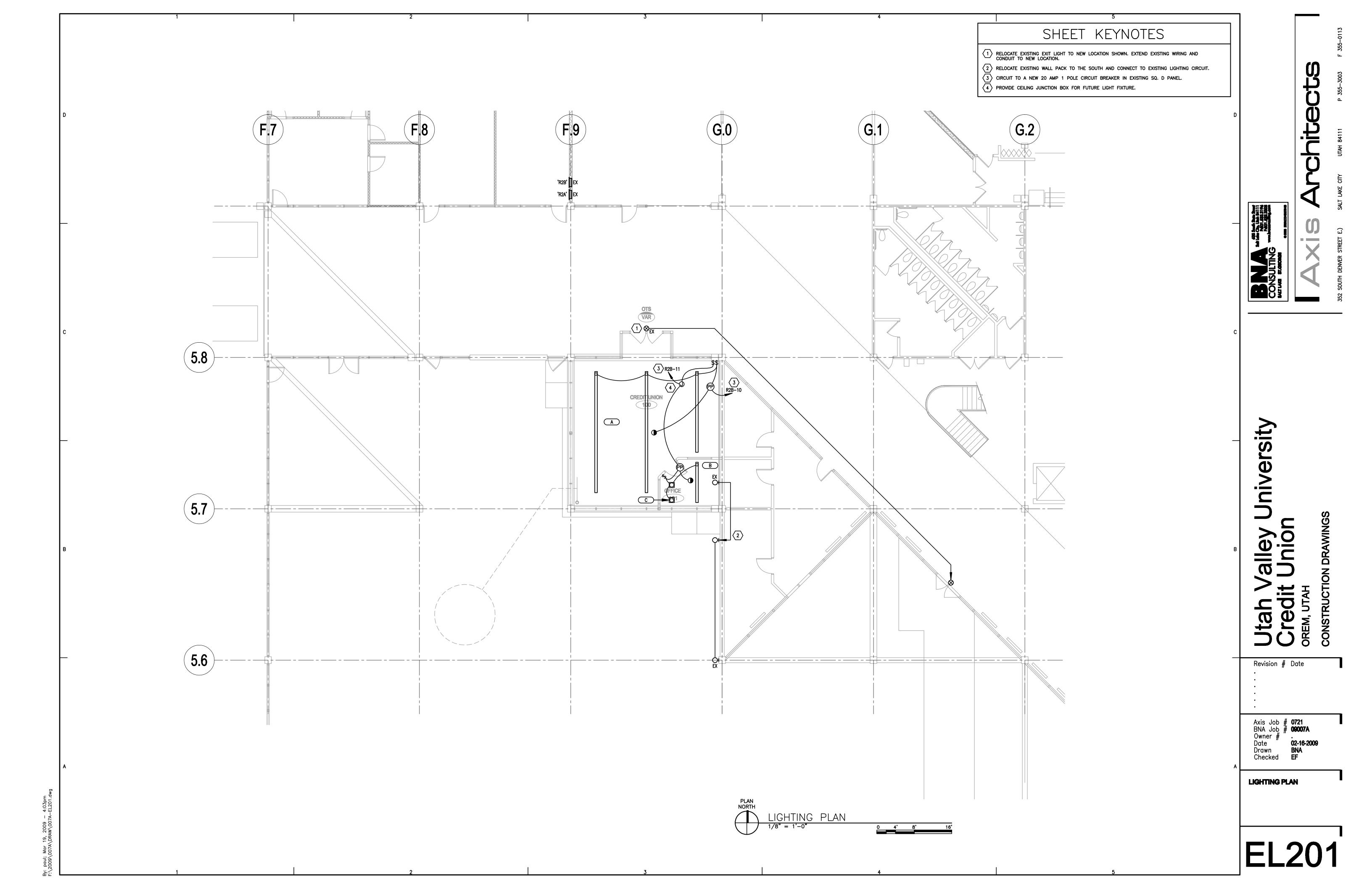
PRODUCTS WITHOUT PHOTOMETRIC DATA WILL NOT BE APPROVED.

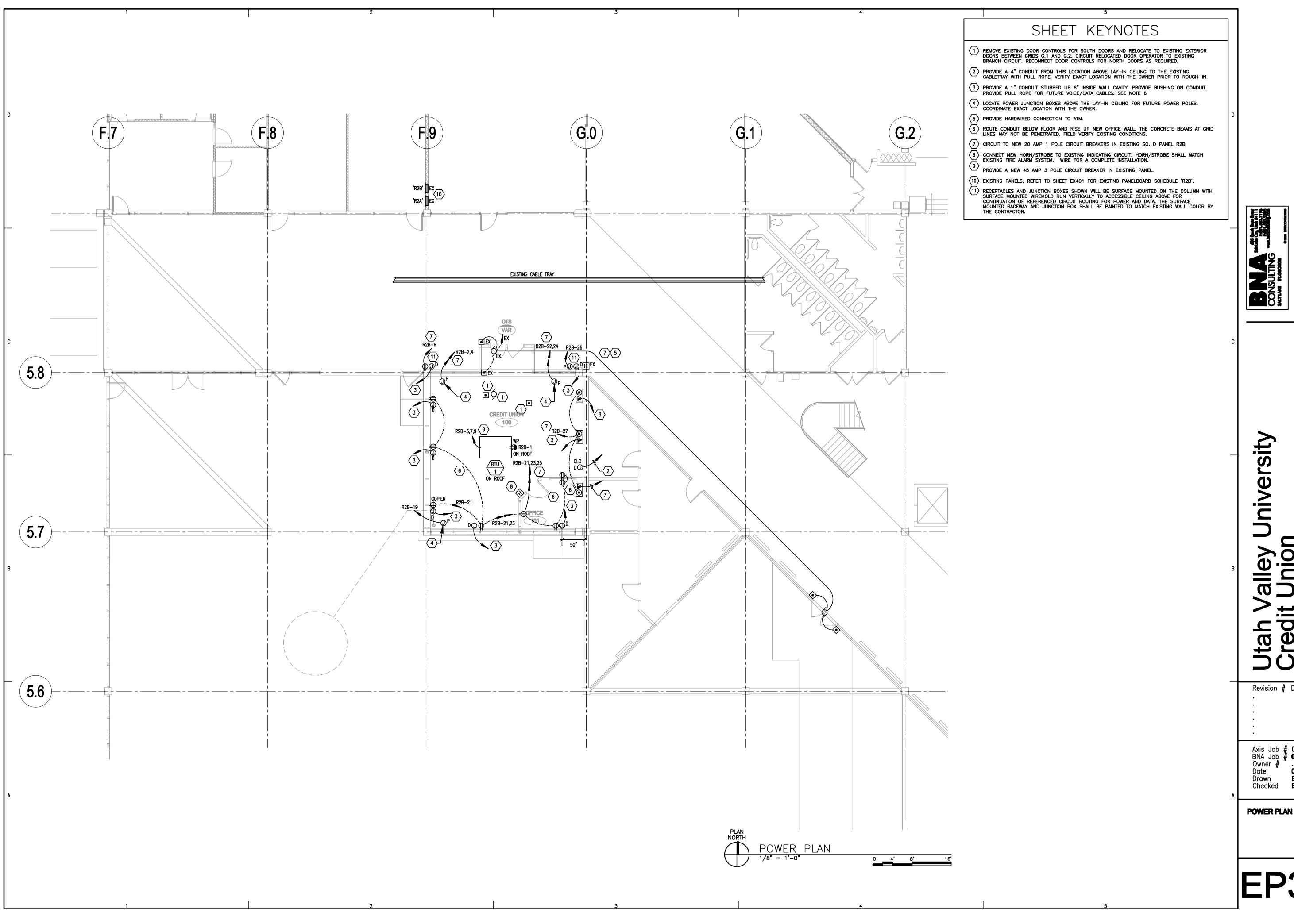
7. SUPPLY POINT-BY-POINTS AS REQUIRED BY THE ELECTRICAL ENGINEER AND/OR LIGHTING DESIGNER.

2. MUST INCLUDE BALLAST AND LAMP CUT SHEETS.

7. PROVIDE A LIST OF SPARE PARTS, EQUIPMENT & LAMPS.

CONNECTED UNDER DIVISION 16.

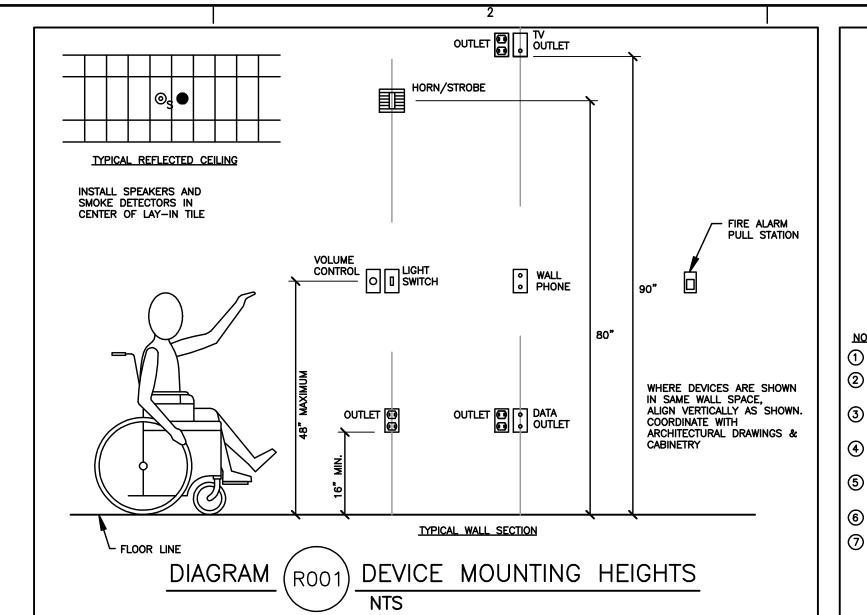


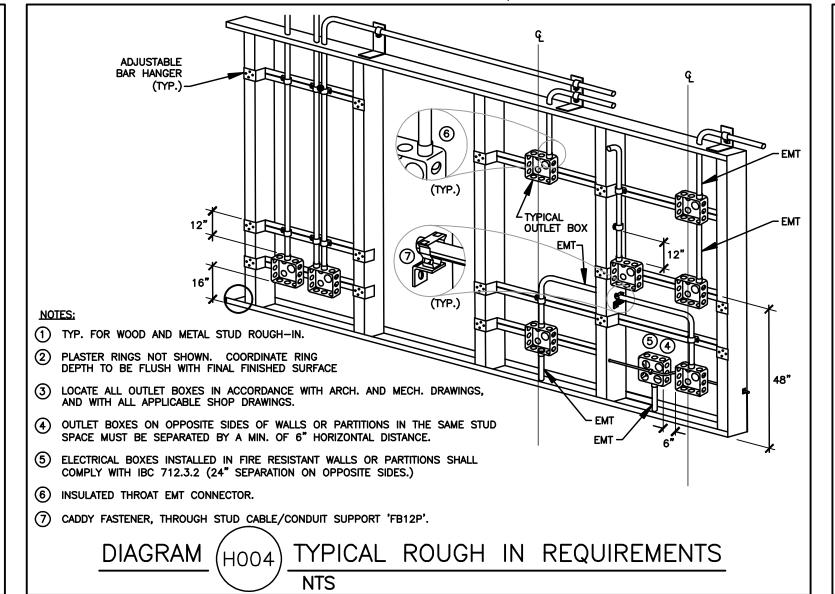


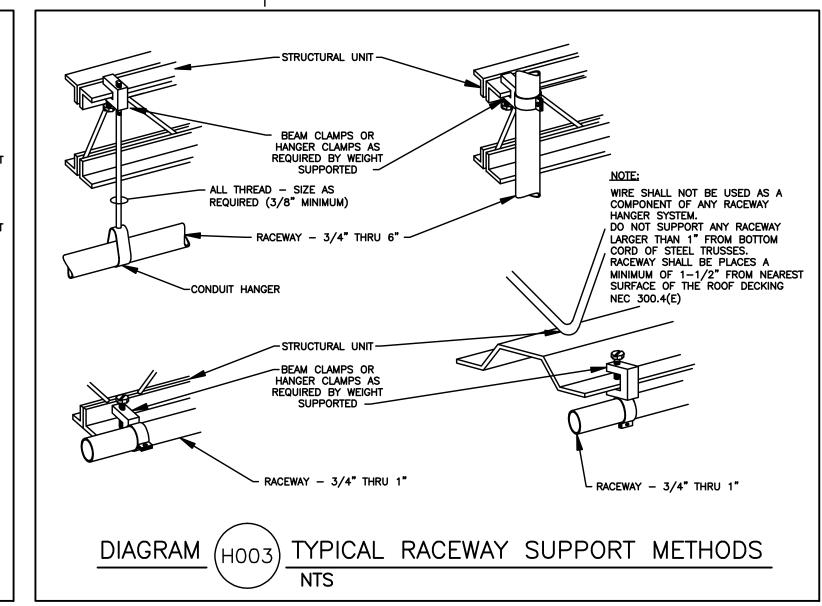
Revision # Date

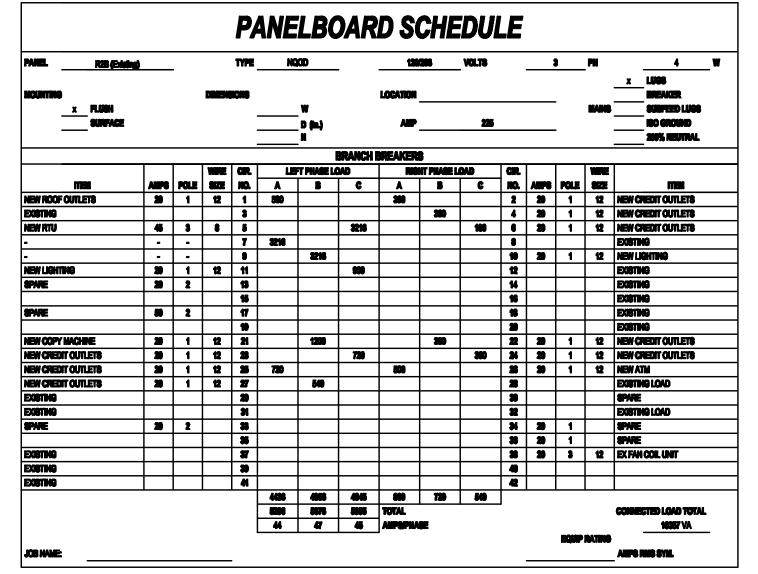
Axis Job # 0721
BNA Job # 09007A
Owner # .
Date 02-16-200
Drawn BNA
Checked EF

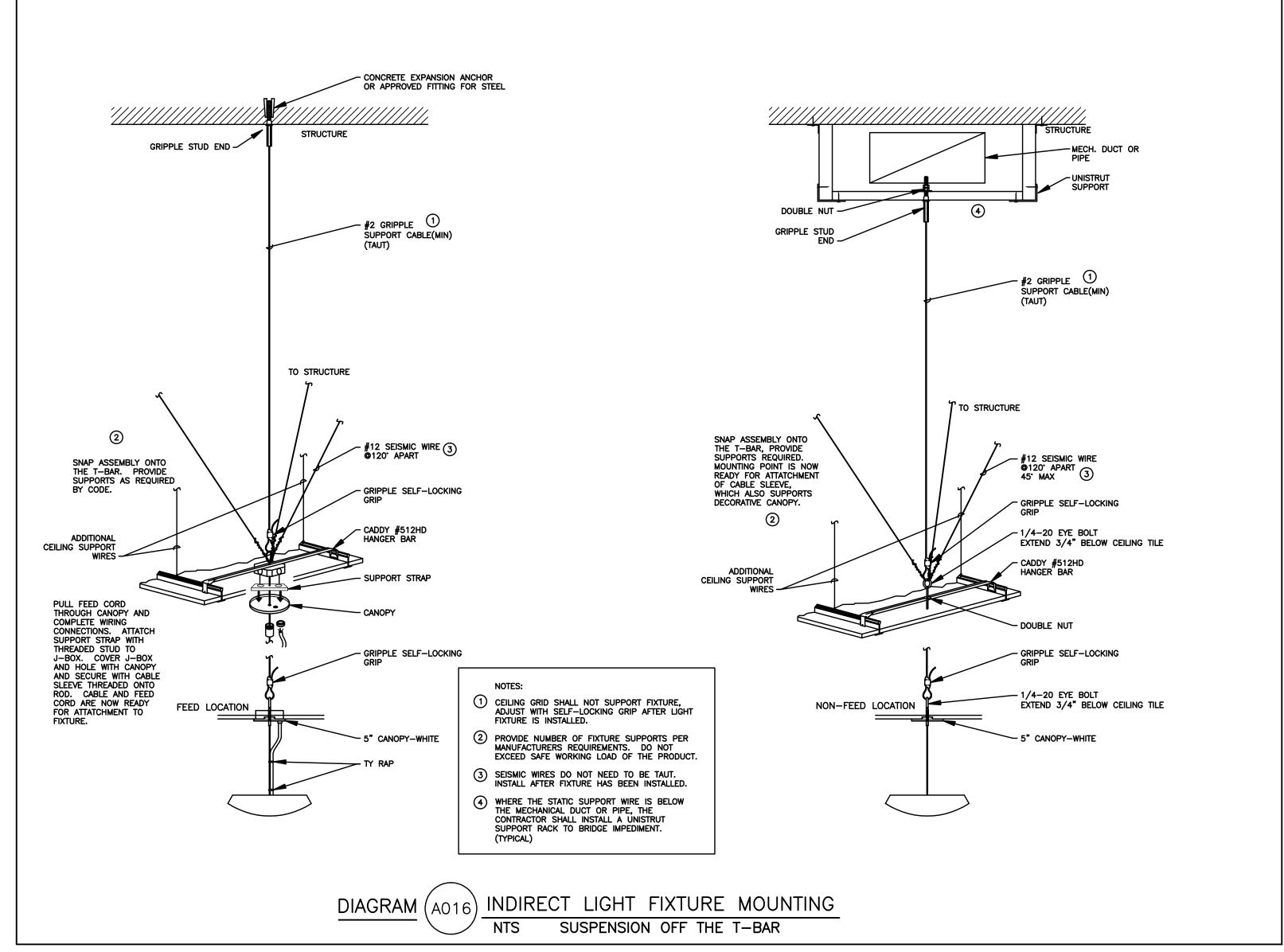
**EP301** 













tah Valley University redit Union

Axis Job # 0721
BNA Job # 09007A
Owner # .
Date 02-16-2009
Drawn BNA
Checked EF

ELECTRICAL DIAGRAMS
AND PANELBOARD

EX401